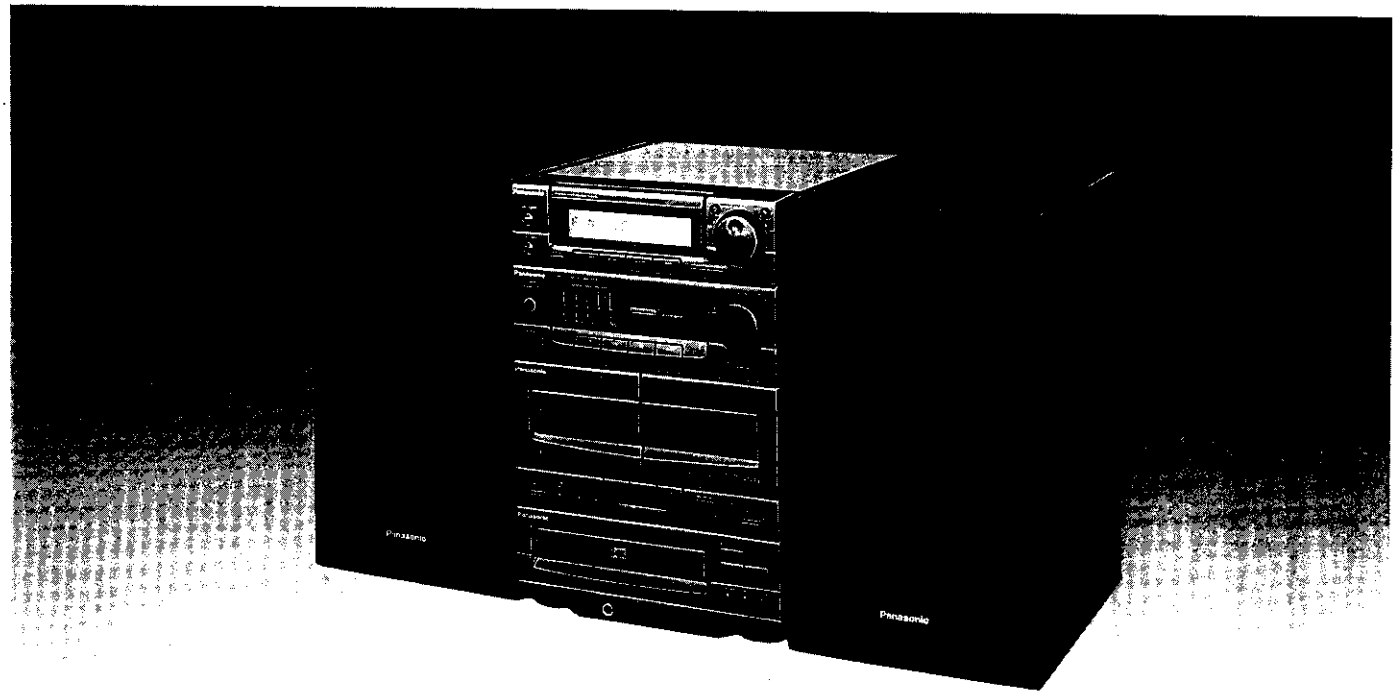
Panasonic

CD Stereo System

SC-CH31

Operating Instructions



COMPACT disc DIGITAL AUDIO

Before connecting, operating or adjusting this product, please read these instructions completely.

GC GN

RQT2482-1G

Thank you for purchasing this product.

For optimum performance and safety, please read these instructions carefully.

ENGLISH

Table of Contents

Suggestions for Safety 3
Preparations 4
Front Panel Controls and Functions 7
Remote Control Unit Controls and Functions 12
Concerning the Remote Control 14
Setting the Time of Day 15
Basic Operating Procedure 16
Listening to Radio Broadcasts 17
Listening to Compact Discs 22
Listening to Tapes 31
Making a Recording 35
Edit-Recording from Compact Discs 38
Changing the Tone Quality 44
Using the Timer 46
Using the Microphone 53
Using an External Unit 54
Care & Use 55
Troubleshooting Guide 58
Technical Specifications 60

(For areas except Australia and New Zealand:)

CAUTION:

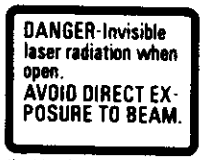
The AC voltage is different according to the area.

Be sure to set the proper voltage in your area before use.

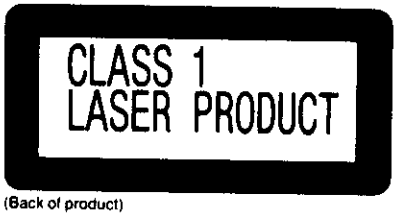
(For details, please refer to page 6.)

CAUTION!

THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.



(Inside of product)



(Back of product)

THIS MUSIC SYSTEM IS CAPABLE OF RECEIVING THE NEW AM STEREO BROADCASTS FROM THE AM BAND RADIO STATIONS. HOWEVER LIKE MANY MUSIC SYSTEM CURRENTLY AVAILABLE ON THE MARKET IT WILL REPRODUCE THIS AM STEREO SIGNAL ONLY IN AM MONO, WHICH, IN EFFECT, IS OF NO LESSER QUALITY THAN YOUR EXISTING AM MONO MUSIC SYSTEM.

Suggestions for Safety

■ Use a standard AC wall outlet

1. **Use from an AC power source of high voltage, such as that used for an air conditioner, is very dangerous.**
   A fire might be caused by such a connection.
2. **A DC power source cannot be used.**
   Be sure to check the power source carefully, especially on a ship or other place where DC is used.

■ Grasp the plug when disconnecting the power supply cord

1. **Wet hands are dangerous.**
   A dangerous electric shock may result if the plug is touched by wet hands.
2. **Never place heavy items on top of the power supply cord, nor force it to bend sharply.**

■ Place the unit where it will be well ventilated

Place this unit at least 10 cm (4") away from wall surfaces, etc.

■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.

In places where there is excessive vibration or humidity.

Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

■ Be sure to place the unit on a flat, level surface

If the surface is inclined, a malfunction may result.

■ Never attempt to repair nor reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ Take particular care if children are present

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

■ Disconnect the power supply cord if the unit will not be used for a long time

If the unit is left for a long time with the power ON, this not only will shorten its useful operation life, but also may cause other trouble.

■ If trouble occurs

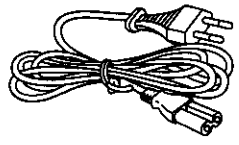
If, during operation, the sound is interrupted or indicators no longer illuminate, or if an abnormal odour or smoke is detected, immediately disconnect the power cord plug, and contact with your dealer or an Authorized Service Center.

Preparations

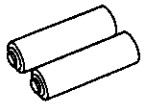
Supplied accessories

Check the packing carton for these accessories.

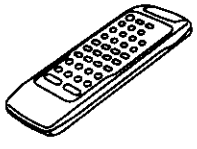
AC power supply cord 1 pc.



Remote control batteries (UM-4, AAA, R03) 2 pcs.

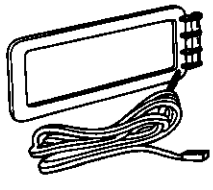


Remote control transmitter 1 pc.



Antenna holder 1 pc.

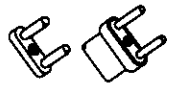
AM loop antenna 1 pc.



Mounting screws 2 pcs.

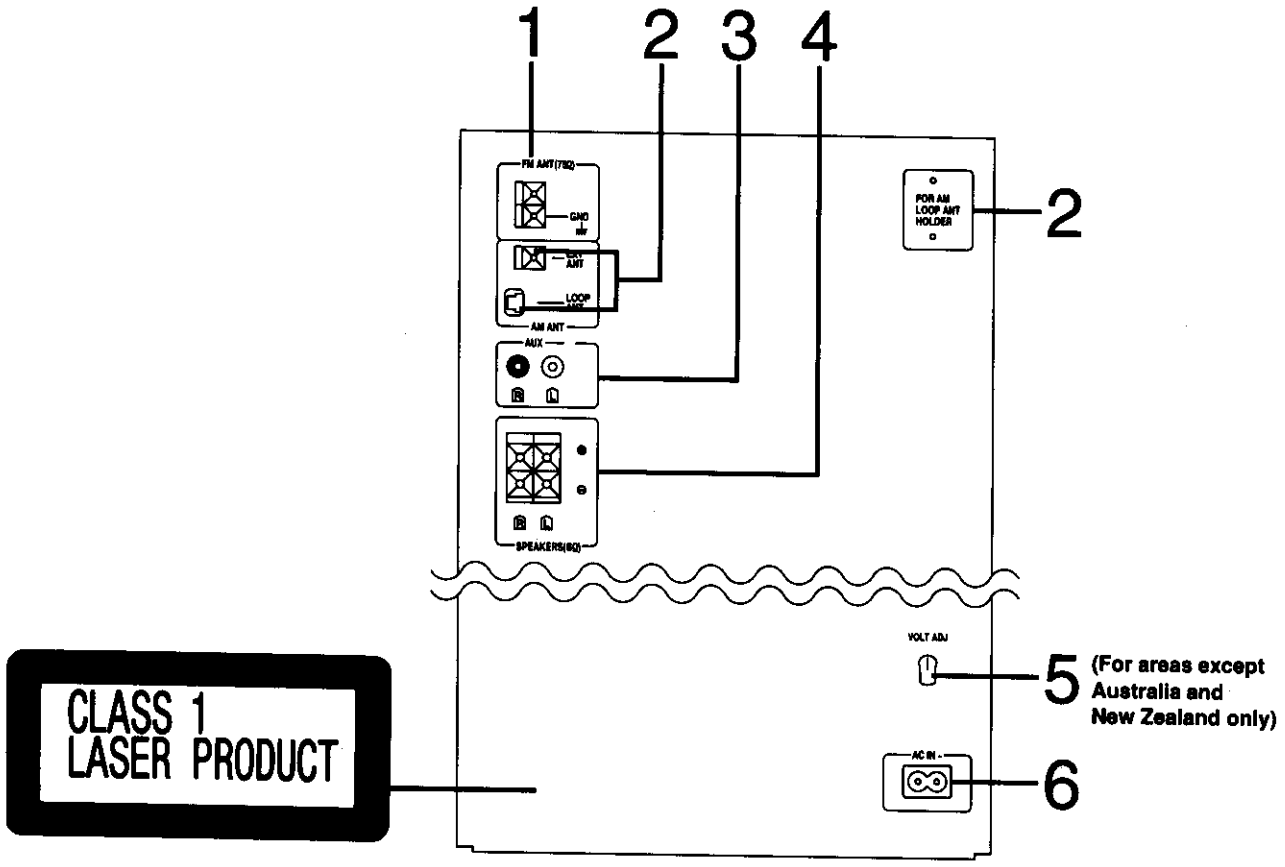
FM indoor antenna 1 pc.

Plug adaptor 1 pc.
(For areas except Australia and New Zealand)



Note:
The configurations of AC power supply cord differs according to area.

Connections

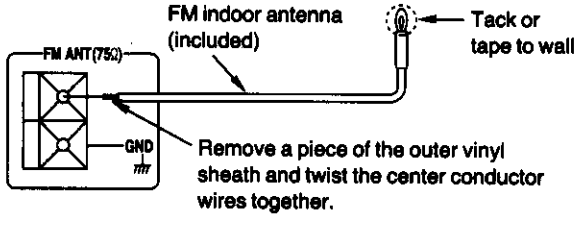


1 Connect the FM indoor antenna provided with this system.

Tack or tape this antenna to a wall. If you use a tack, be sure it does not contact the internal antenna wire. Experiment with the height and direction of the antenna until you achieve the best reception.

For best reception and sound quality:
Use an FM outdoor antenna. If you use an FM outdoor antenna, disconnect the indoor antenna.

Connecting the FM indoor antenna



■ FM outdoor antenna (not included)
If the FM indoor antenna does not provide satisfactory reception of FM broadcasts, use an outdoor antenna.
You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.

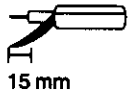
An outdoor antenna should be installed by a competent technician only.

Connecting a 75-ohm coaxial cable

1. Remove a piece of the outer vinyl sheath from the end of the cable.

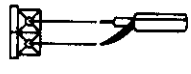
30 mm

2. Bundle the shield braid, and remove a piece of the inner vinyl sheath covering the core wire.



15 mm

3. Tilt the lever back and insert the core wire and the shield braid.



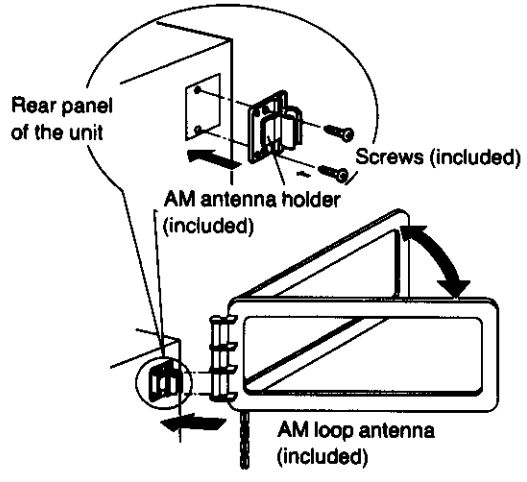
4. Close the lever and pull the cable gently to be sure that it is secure.

Preparations (continued)

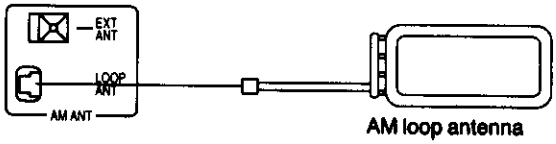
2 Connect the AM loop antenna provided with this system.

You must connect this antenna to receive AM broadcasts.

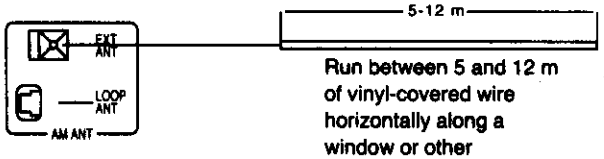
Connect the AM loop antenna to the AM antenna terminal. (The indication AM used here includes MW, SW1 and SW2.) You may attach the AM antenna holder to the rear panel of the system or to a rack or other structure.
Clamp the antenna to the holder and position the loop for the best reception. To minimize noise pickup, keep the loop antenna away from the speaker cable, power cord, and metal surfaces.



Connecting the AM loop antenna:

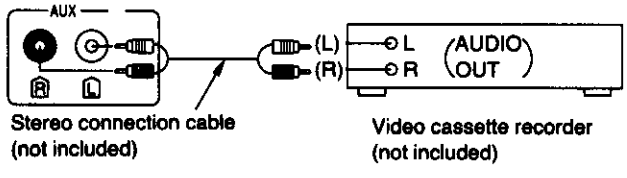


Connecting the AM outdoor antenna (not included)
You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.


5-12 m
EXT ANT
LOOP ANT
AM ANT
Run between 5 and 12 m of vinyl-covered wire horizontally along a window or other convenient location.

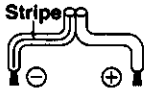
3 Connect an external unit, such as audio tape deck (for playback only) or output terminals of a VCR or TV (not included).

Connecting external units:



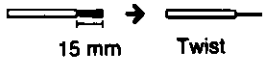
4 Connect the speaker cables [for right (R) and left (L) channels].

Notes:
- Connect speaker cables before connecting the AC power supply.
- The load impedance of any speaker used with this unit must be 6 ohms.
- Be sure to connect the striped wire to the negative terminals.

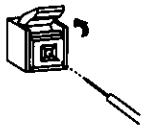


Connection of speaker cables

1. Strip off the outer covering, and twist the center conductor.

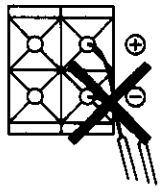


2. Tilt the lever back and insert the wire.



3. Close the lever and pull the wire gently to be sure that it is secure.

Notes:
To prevent damage to circuitry, never short-circuit positive (+) terminals and negative (−) speaker wires.



Be sure to connect only positive (+) wires to positive (+) terminals and negative (−) wires to negative (−) terminals.

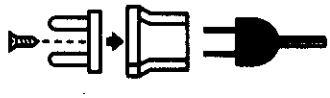
(For areas except Australia and New Zealand only)

5 Set the voltage.

Use a flat-head screwdriver to turn the voltage selector on the rear panel to the voltage setting for the area in which you will be using the system.

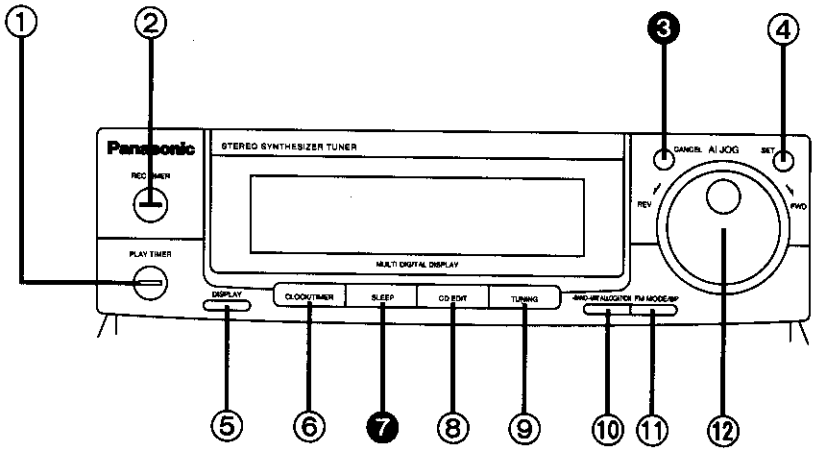
6 Connect the AC power supply cord after you have connected all other cables and cords.

(For areas except Australia and New Zealand only)
If the power plug will not fit your socket, use the power plug adaptor (included).



Front Panel Controls and Functions

The functions indicated by the numbers with black background (for example ❸) can also be activated from the remote control transmitter. (See page 12.)



Tuner

■ Tuner control

① Timer play button (PLAY TIMER)
Use for timer play (when you want play to begin automatically at a preset time).

② Timer recording button (REC TIMER)
Use for timer recording (when you want to begin recording automatically at a preset time).

❸ Cancel button (CANCEL)
Press to cancel the contents chosen with the jog dial.

④ Set button (SET)
Press to set various functions.

⑤ Display select button (DISPLAY)
Press to select the display (mode display, clock, tape counter, etc.).

⑥ Clock/timer button (CLOCK/TIMER)
Use to select the desired timer mode or to adjust the clock.

❼ Sleep timer button (SLEEP)
Press when you want the system to turn itself off.

⑧ Compact disc edit-recording mode select button (CD EDIT)
Press to select the desired edit-recording mode.

⑨ Tuning mode select button (TUNING)
Press to select the preset, manual or auto tuning mode.

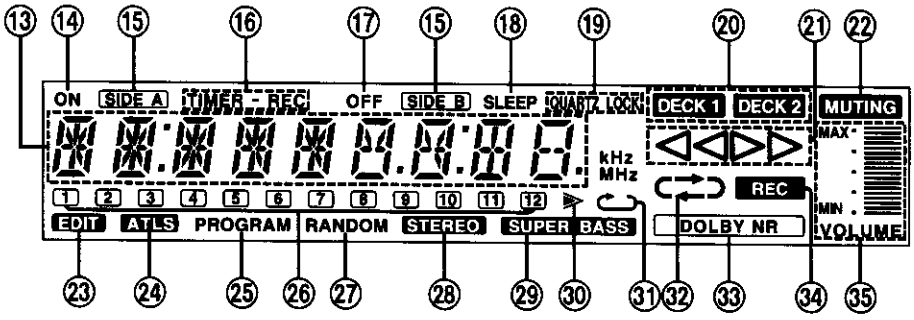
⑩ Band select/MW allocation change button (BAND/MW ALLOCATION)
Press to select the FM, MW, SW1 or SW2 (For Australia and New Zealand: FM, LW, MW) radio band.
Press and hold to change the MW frequency step (For areas except Australia and New Zealand only).

⑪ FM mode/beat proof button (FM MODE/BP)
Press to select the FM listening mode (stereo or monaural) during FM broadcasts or to reduce the unwanted beat signals (whistle) during recording of an MW/SW1/SW2 broadcast.

⑫ Jog dial (AI JOG)
Use to select the contents of the mode, i.e., select tracks in CD player mode or stations in the tuner mode, as well as many other functions.

Front Panel Controls and Functions

(continued)



• ㉝ is for Australia and New Zealand only.

Multi digital display

⑬ Alphanumeric display
Shows the selected source, present time, tape counter and the contents of the timer setting, received frequencies, CD edit-recording mode, volume level, etc.

⑭ Timer on-time indicator (ON)
Shows the timer on-time (the time the system is set to go on).

⑮ Tape side indicator (SIDE A, B)
Shows which side of the cassette tape (A or B) will be recorded on when you use the edit-recording of a compact disc.

⑯ Timer recording indicator (TIMER REC)
Lights when you press the timer recording button.

⑰ Timer off-time indicator (OFF)
Shows the timer off-time (the time the system is set to shut off).

⑱ Sleep timer indicator (SLEEP)
Lights when you press the sleep timer button.

⑲ Quartz lock indicator (QUARTZ LOCK)
Lights when you precisely tune in a broadcast station.

⑳ Deck 1/deck 2 indicator (DECK 1, DECK 2)
Lights to show which deck is operational (deck 1 or deck 2).

㉑ Tape direction indicators (◁, ▷)
Shows the direction of tape travel.

㉒ Muting indicator (MUTING)
Lights when you activate the muting mode.

㉓ Compact disc edit-recording indicator (EDIT)
Lights when you use the edit-recording from a compact disc.

㉔ Automatic tape level setting indicator (ATLS)
Lights when you use ATLS recording.

㉕ Program indicator (PROGRAM)
Lights during the program play mode of the compact disc.

㉖ Matrix display (1–12)
Shows the number of tracks and preset channels.

㉗ Random play indicator (RANDOM)
Lights during the random play mode of the compact disc.

㉘ FM stereo indicator (STEREO)
Lights when you receive an FM stereo broadcast. It will not light if you are using the FM mode/beat proof button to select monaural mode.

㉙ Super bass indicator (SUPER BASS)
Lights when you activate the super bass mode.

㉚ Over indicator (⮞)
Lights if there are 13 or more tracks on the disc.

㉛ Repeat play indicator (↩)
Lights during the repeat play mode of the compact disc.

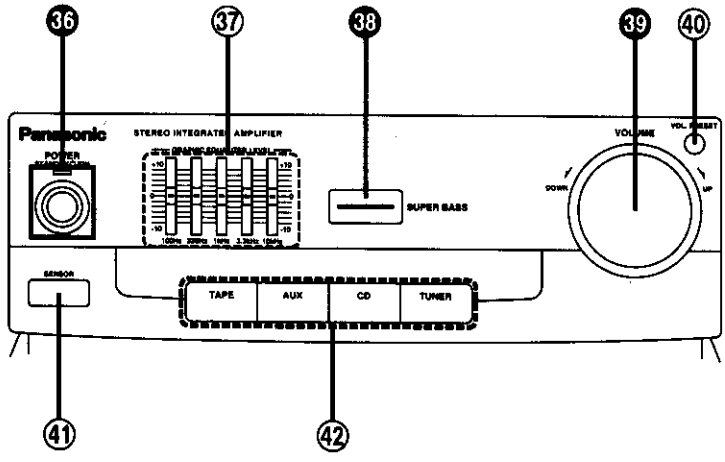
㉜ Reverse mode indicators (⇄) (⇄) (⊂⇄⊃)
Shows which of the reverse modes you selected with the reverse mode button.

(For Australia and New Zealand only:)

㉝ Dolby noise reduction indicator (DOLBY NR)
Lights when you activate the Dolby noise reduction system.

㉞ Recording indicator (REC)
Lights when the system is in the recording (recording standby) mode.

㉟ Volume level indicator
Shows the volume level.



Amplifier

■ Amplifier controls

㊱ Power "STANDBY ⏻ /ON" switch and indicator (POWER, STANDBY ⏻/ON)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.

㊲ Equalizer controls (GRAPHIC EQUALIZER LEVEL)
Use to adjust the equalization level.
These controls are for compensation of tonal quality. By sliding the controls at each of the indicated frequencies in the "+" direction, the tonal quality is increased, and by sliding them in the "−" direction, the tonal quality is decreased.
(See page 44.)

㊳ Super bass button (SUPER BASS)
Press to boost the dynamic low-frequency ranges.

㊴ Volume level control (VOLUME)
Turn to adjust the volume level.
When turning the control, the alphanumeric display shows the volume level.
Note that −− dB is the lowest volume setting and 0 dB is the highest.

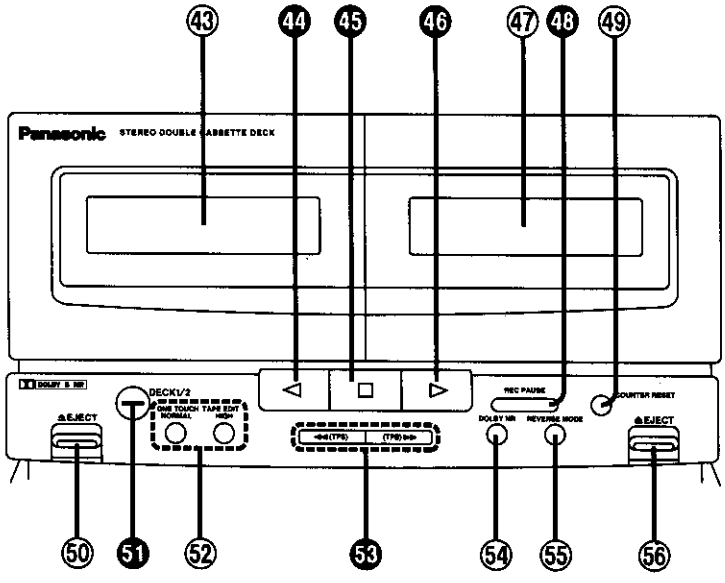
㊵ Volume preset button (VOL PRESET)
Use to preset volume for timer play.

㊶ Remote control signal sensor (SENSOR)
Receives the signals from the remote control.

㊷ Input select buttons (TAPE, AUX, CD, TUNER)
Press to select the sound source.

Front Panel Controls and Functions

(continued)



• ⑭ is for Australia and New Zealand only.

Cassette deck

⑬ Deck 1 cassette holder

⑭ Reverse-side playback button (◁)
Press to start the playback or recording (deck 2) in the reverse direction.

⑮ Stop button (□)
Press to stop the tape.

⑯ Forward-side playback button (▷)
Press to start the playback or recording (deck 2) in the forward direction.

⑰ Deck 2 cassette holder

⑱ Record/record standby button (REC PAUSE)
Press to put deck 2 into the record standby mode.

⑲ Tape counter reset button (COUNTER RESET)
Press to reset the tape counter indicator to 000.

⑳ Deck 1 cassette eject button (▲ EJECT)
Press to open the deck 1 cassette holder.

㉑ Deck 1/deck 2 select button (DECK 1/2)
Press to select the deck to be operated.

㉒ One-touch tape edit buttons (ONE TOUCH TAPE EDIT)
Press to start the tape-to-tape recording.

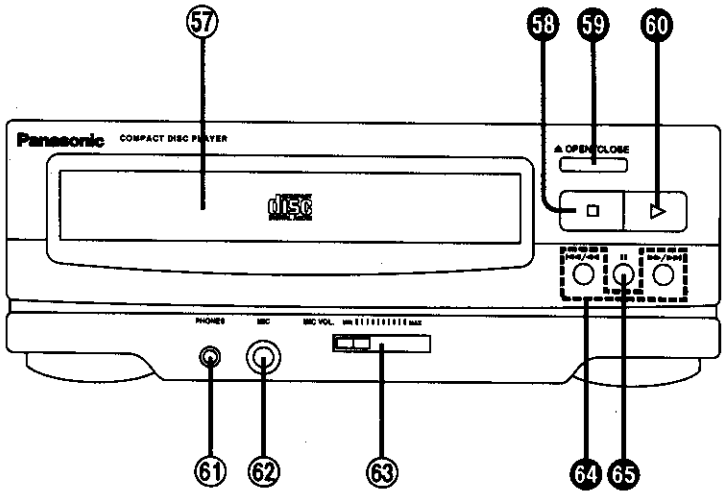
㉓ Fast-forward/rewind/tape program sensor (TPS) buttons [◀◀ (TPS), (TPS) ▶▶]
Press to advance or rewind the tape, or to quickly search for the beginning of a track while the tape is being played.

(For Australia and New Zealand only:)

㉔ Dolby noise reduction button (DOLBY NR)
Use to reduce the hissing noise heard from the tape. This system has the Dolby B-type noise reduction system.

㉕ Reverse mode select button (REVERSE MODE)
Press to select the reverse mode (for playback and recording).

㉖ Deck 2 cassette eject button (▲ EJECT)
Press to open the deck 2 cassette holder.



•62 and 63 are for areas except Australia and New Zealand only.

Compact disc player

57 Disc tray

58 Stop button (□)
Press to stop the disc play.

59 Disc tray open/close button (▲ OPEN/CLOSE)
Press to open and close the disc tray.

60 Play button (▷)
Press to start disc play.

61 Headphones jack (PHONES)
Plug headphones cord into this jack.

(For areas except for Australia and New Zealand only:)

62 Microphone jack (MIC)
Plug microphone cord into this jack.

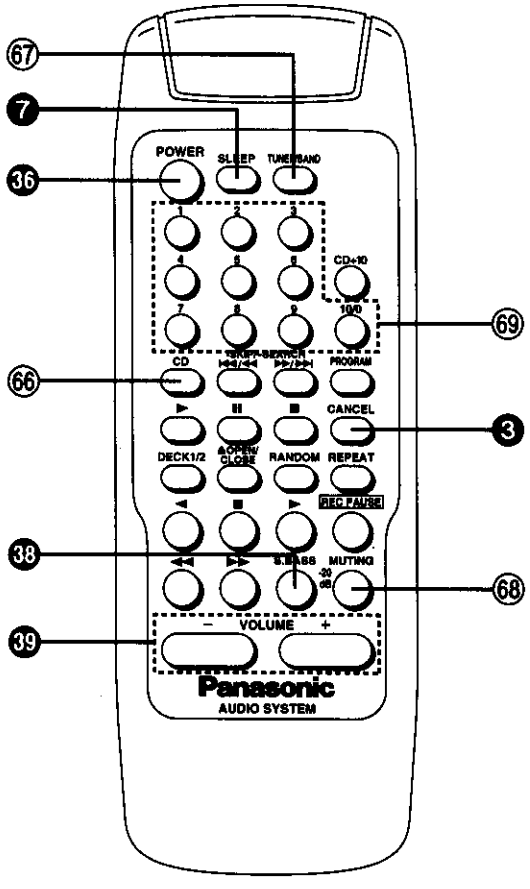
(For areas except for Australia and New Zealand only:)

63 Microphone volume level control (MIC VOL)
Slide to adjust the microphone volume level.

64 Skip/search buttons (⏮/◀◀ • ▶▶/⏭)
Press to move forward or backward through the tracks on a disc, or to hear disc sound at high speed while searching in the play mode.

65 Pause button (⏸)
Press to stop the disc play temporarily.

Remote Control Unit Controls and Functions



Common operation controls

The function description of buttons ㊱, ㊳ and ㊴ is as described under "Amplifier controls" on page 9.

㊻ CD input select button (CD)

Press to select the CD source.

㊼ Tuner input select button (TUNER/BAND)

Press to select the tuner source.

㊽ Muting button (MUTING −20 dB)

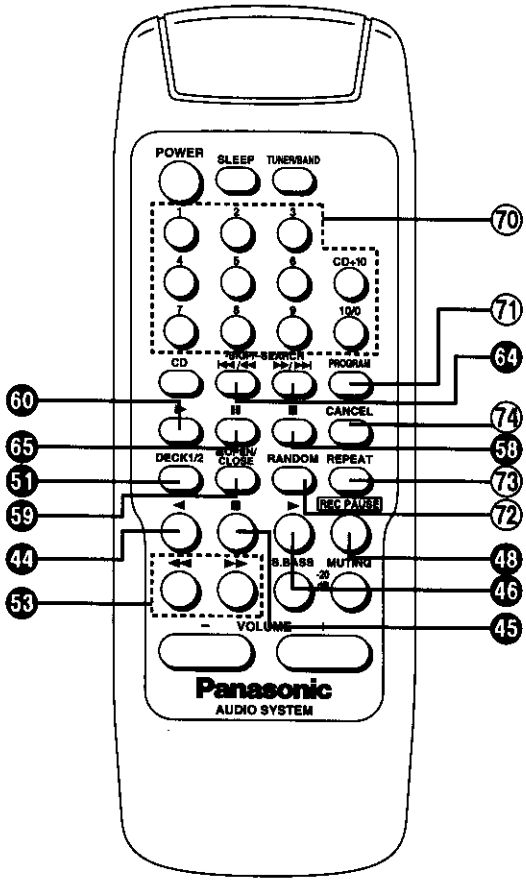
Press to temporarily attenuate (mute) the volume level.

Tuner controls

The function description of buttons ❸ and ❼ is as described under "Tuner control" on page 7.

㊾ Preset-tuning buttons (1–10/0)

Press to select the preset channel of the tuner.



Compact disc controls

The function description of buttons ⑤⑨, ⑤⑤, ⑥⓪, ⑥④ and ⑥⑤ is as described under "Compact disc player" on page 11.

⑦⓪ Numeric buttons (1–10/0, +10)
Use to specify the compact disc's track.

⑦① Program button (PROGRAM)
Press to activate the program play mode. You can then enter specific tracks using the numeric buttons.

⑦② Random button (RANDOM)
Press to play the disc's tracks in random order.

⑦③ Repeat button (REPEAT)
Press to activate the repeat mode.

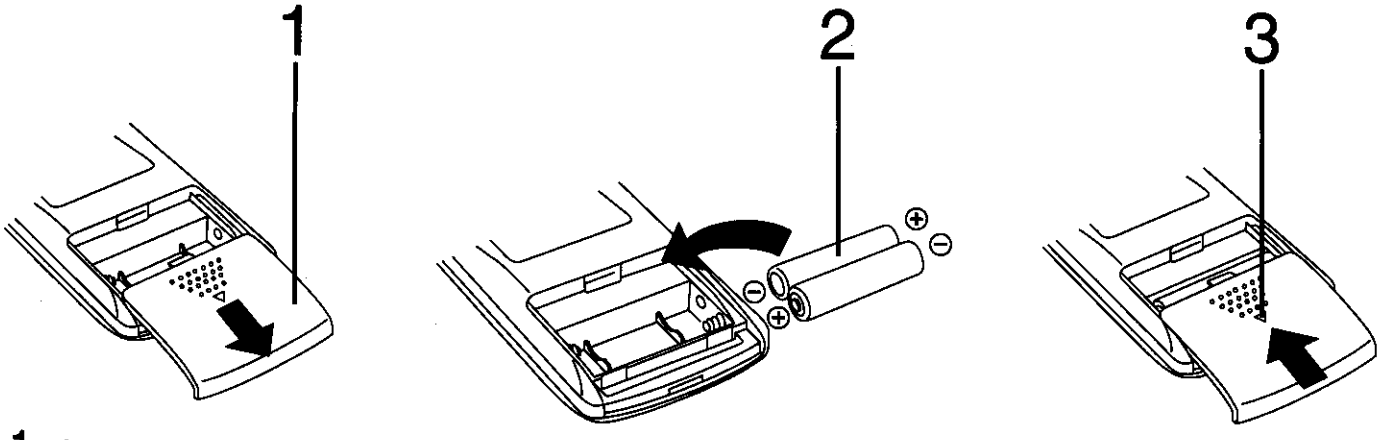
⑦④ Cancel button (CANCEL)
Press to change the program. (See page 27.)

Cassette deck controls

■ Cassette deck section
The function description of buttons ④⑨, ④⑤, ④⑥, ④⑧, ⑤① and ⑤③ is as described under "Cassette deck" on page 10.

Concerning the Remote Control

Battery installation



1 Open the cover.
Press gently and slide the cover out.

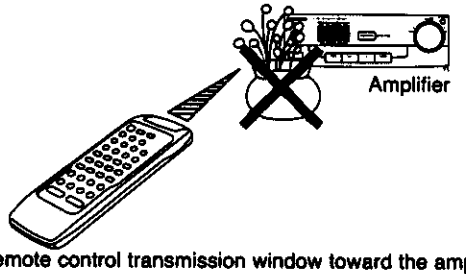
2 Insert the batteries included with this system.
- When you need to replace these batteries, use two UM-4 "AAA", IEC R03 (1.5 V) or equivalent batteries.
- Be sure that you insert the batteries so that their positive (+) and negative (−) polarities match the polarities indicated in the compartment. Batteries installed incorrectly may leak and cause damage.
- Refer to "Use of batteries" for additional information.

3 Close the cover.

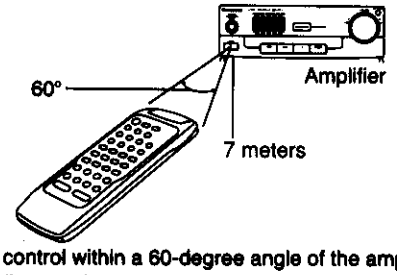
Use of batteries

- Do not mix old and new batteries or batteries of different types (carbon and alkaline, etc.).
- The average battery life is about one year. Although the battery life varies depending on how often the device is used, you should generally replace the batteries about once a year.
- Replace the batteries if commands from the remote control transmitter do not operate the unit even when the transmitter is held close to the front panel.
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If you will not be using the remote control for a long period of time, remove the batteries and store them in a cool, dark place.
- If a battery leaks, remove all batteries and dispose of them properly. Thoroughly clean the battery compartment before inserting new batteries.
  If the leaking electrolyte comes into contact with skin or clothes, flush with water immediately.
- Keep batteries out of the reach of children.
- Do not use rechargeable-type (nickel-cadmium) batteries.
- Do not attempt to recharge alkaline or carbon batteries.
- Always remove old, weak, or worn-out batteries promptly and dispose of them properly.
- Do not dispose of used batteries in household rubbish.

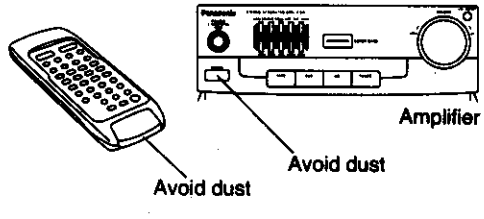
Operation notes



Aim the remote control transmission window toward the amplifier's sensor. Avoid any obstacles.

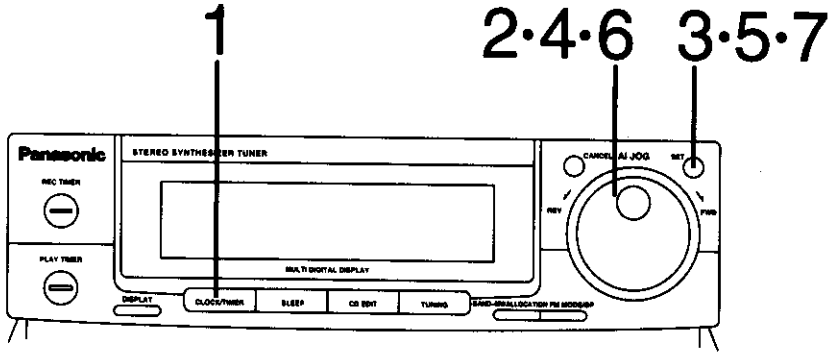


Use the remote control within a 60-degree angle of the amplifier. The reachable distance is within 7 meters directly facing toward the amplifier.



- Be sure the transmission window and the amplifier's sensor are free from dust. Excessive dust might prevent reception.
- If direct sunlight or other strong light source strikes the remote control signal sensor part of the amplifier, it may impair the remote control's operation. If there is a problem, place the amplifier away from the light source.
- If this system is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote-control transmitter a shorter distance from the system.

Setting the Time of Day

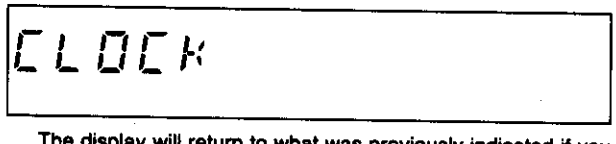


These instructions explain how to set the time of 18:20.

Switch on the power.

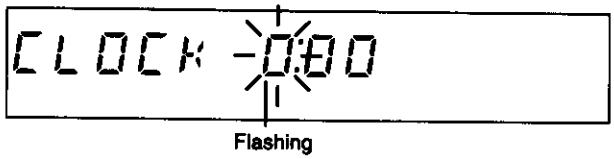
1 Press CLOCK/TIMER.

2 Select the CLOCK mode by turning the jog dial.
The display will change to P-TIMER, R-TIMER, SLEEP, and CLOCK.



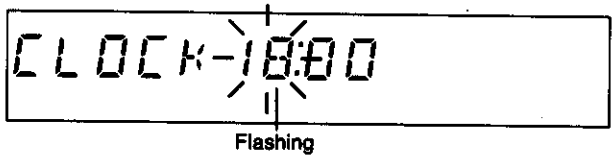
The display will return to what was previously indicated if you allow 10 or more seconds to elapse before you accomplish the next operation.

3 Press SET.



Flashing

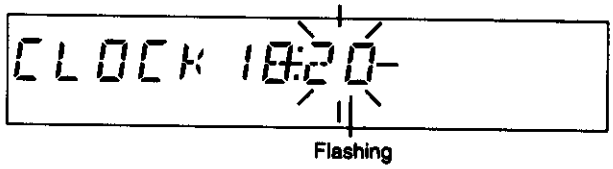
4 Turn the jog dial to the correct hour.
Turn clockwise to increase numbers and counterclockwise to decrease.



Flashing

5 Press SET.

6 Turn the jog dial to the correct minute.
Going from 59 to 00 on the minute display will not change the hour display.



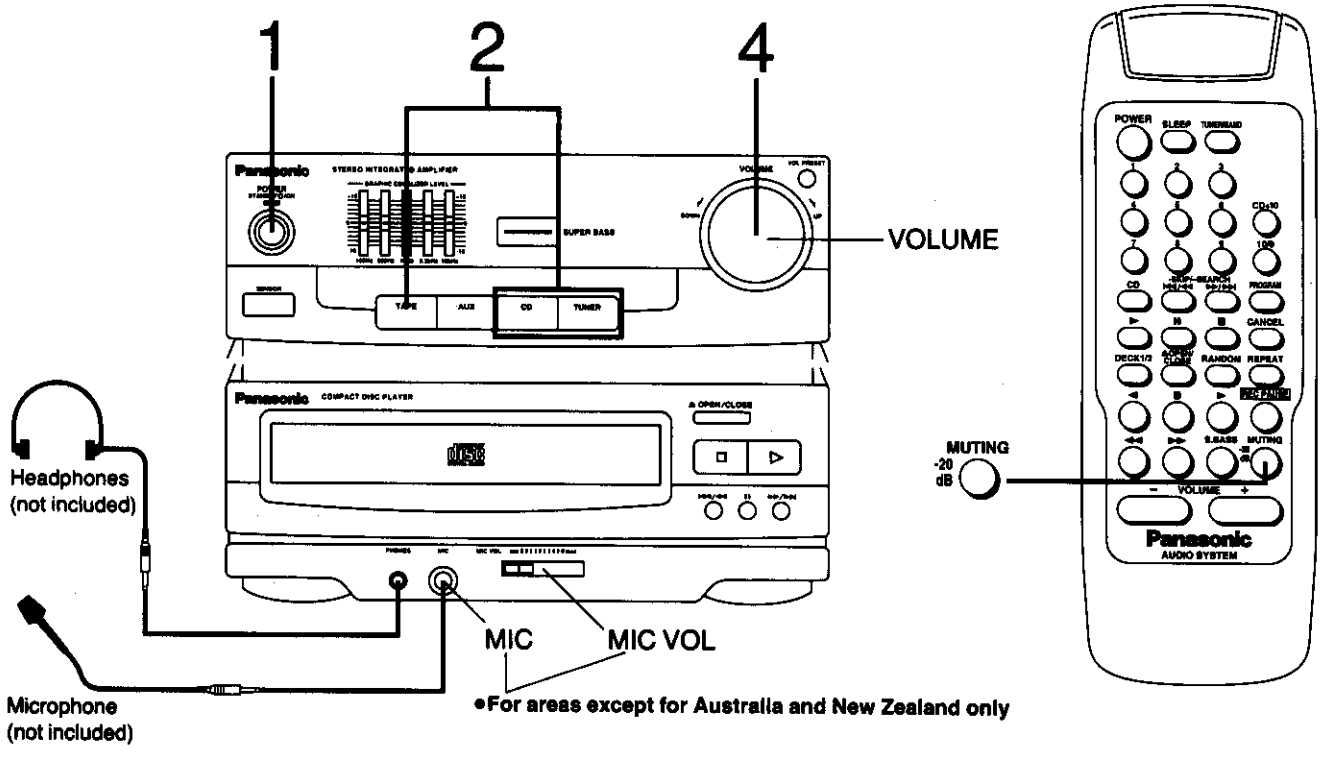
Flashing

7 Press SET.
- The display will change to the previous display.
- Pressing SET resets the clock to "0" seconds.

Note:
"E" appears on the display if the power cord has been once disconnected or there has been a power failure. If this happens, reset the time.

Basic Operating Procedure

(Also available from the remote control. Follow the procedure described below.)



1 Press POWER STANDBY ⏻ /ON to switch on the power.

2 Select the sound source by pressing TAPE, CD or TUNER.

The display of the selected mode will appear. If you press a different sound source while listening to a compact disc or tape, the disc or tape automatically stops playing.

- When selecting the tape mode from the remote control, press ◀/▶ on TAPE instead.
  The deck will automatically start playing.

3 Start the sound source.

4 Adjust the volume level.

The memory backup function will retain the volume level and sound source.

Note:

Before you set the system to the standby mode, be sure to reduce the volume level to prevent the extremely high output from the amplifier from damaging the speakers.

How to mute the volume

Press the MUTING on the remote control.

The muting indicator appears on the display.

- This lowers the volume level by 20 dB (approximately 1/10).
- Cancel the muted state by pressing the muting button once again or reduce the volume level to the minimum position and then reset to the desired volume.

How to use headphones (not included)

Reduce the VOLUME level.

Connect the headphones to the headphones jack.

- When you connect the headphones, the speakers will automatically cut off.
- Avoid listening for prolonged periods of time to prevent hearing damage.
- Plug type: Stereo mini

How to use a microphone (not included)

(For areas except for Australia and New Zealand only:)

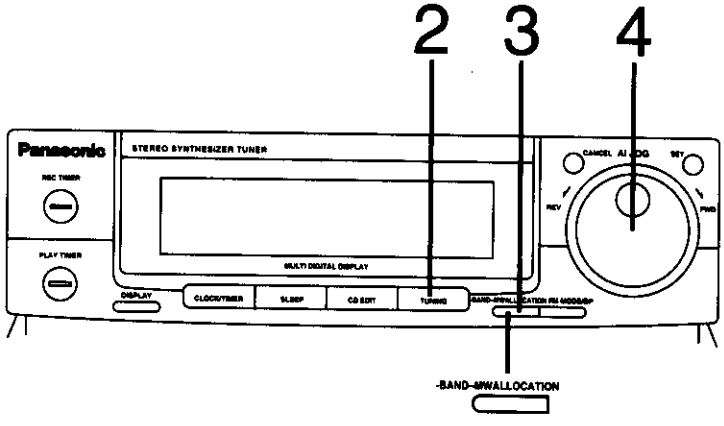
Reduce the VOLUME level.

Connect the microphone to the MIC jack.

- You can control microphone volume using the MIC VOL control within the volume levels of the main unit. Make sure to adjust the main volume level using the VOLUME control to optimum position.
- If you hear strange noises (squealing or howling) during mixing, change the direction of the microphone or turn down the volume.
- For more detailed instructions, see "Using the Microphone" on page 53.

Listening to Radio Broadcasts

Manual tuner operation (to tune to broadcasts by using the jog dial)



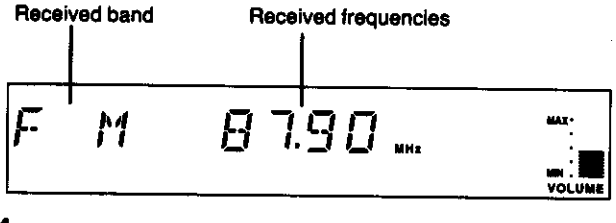
1 Press the TUNER input select button.

2 Press TUNING to select the MANUAL tuning mode.

- Every time you press this button, MANUAL, PRESET and (AUTO) modes alternately appear.
- AUTO will appear only when the FM mode is selected.

3 Press the band-select button to select FM, MW, SW1 or SW2 (For Australia and New Zealand, FM, LW, MW).

The display will show which band you selected.



4 Turn the jog dial to tune in the desired broadcast.

The display will show the frequency to which you have tuned.

- If you have tuned in an FM stereo broadcast, the FM stereo indicator will appear.

(For areas except for Australia and New Zealand only:)

- If you can't receive the desired MW broadcast, or can't set the frequency, you may need to adjust the "allocation" setting. (See right.)

■ MW allocation settings

(For areas except for Australia and New Zealand only:)

This unit comes equipped with an electronic digital tuner that divides the broadcast band into many small steps. These steps match the assignable broadcast frequencies and intervals in between.

Each country allocates (assigns) broadcast bands according to their particular needs.

By adjusting the allocation, you can enable the tuner to receive MW broadcasts allocated in 10 kHz steps.

1. **Press the band-select button to select FM.**
2. **Press and hold the band-select button for approximately 5 seconds.**
   The frequency display will be returned to the minimum frequency of the MW band and the display will begin to flash, continuing for approximately 5 more seconds.
3. **When the display stops flashing and indicates a different frequency number, release the band-select button.**

To return to the original frequency indication, repeat steps 1 to 3 above.

Note:

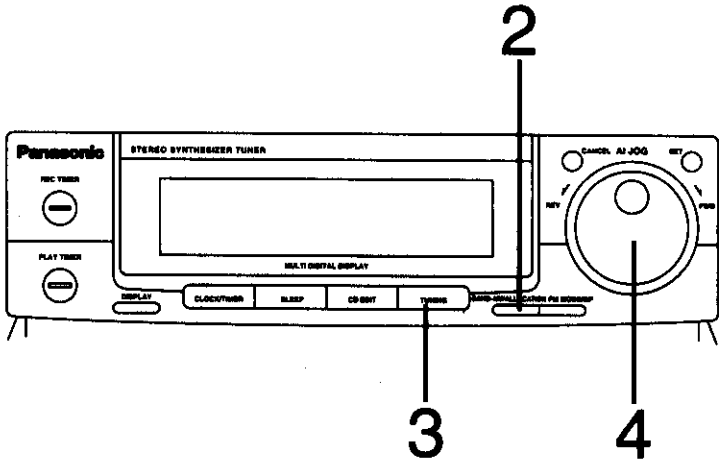
After changing the allocation setting, the MW frequencies you previously preset to the memory will be cleared.

Listening to Radio Broadcasts (continued)

ENGLISH

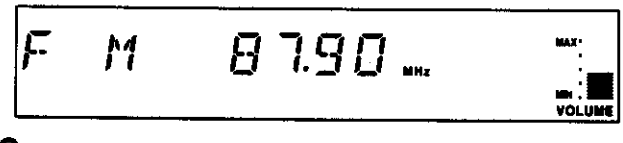
Automatic tuner operation only for FM

Only for FM broadcasting station, you can automatically tune in the FM station by simply turning the jog dial.



1 Press the TUNER input select button.

2 Press the band-select button to select FM.



3 Press TUNING to select the AUTO tuning mode.

Every time you press this button, MANUAL, PRESET and AUTO modes alternately appear.

4 Turn the jog dial clockwise or counter-clockwise and then release it.

The display frequency begins to change.

: Clockwise for the frequency upward.

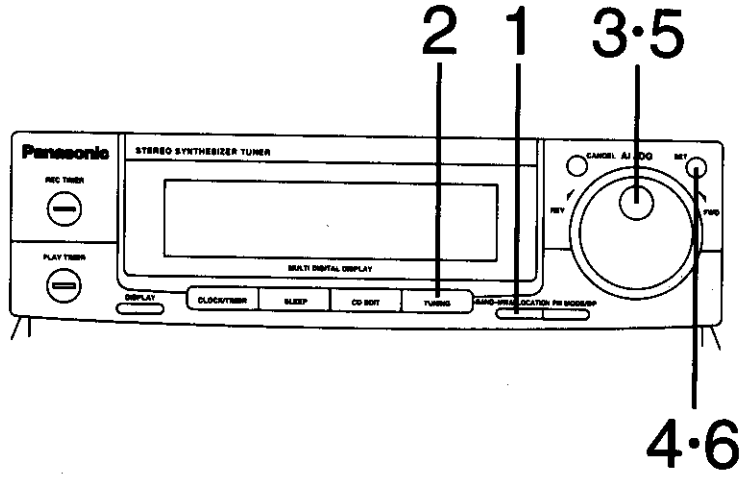
: Counter-clockwise for the frequency downward.

The changing of the displayed frequency will be automatically stopped if the broadcast station is located.

Memory presetting

When you preset broadcast frequencies to the memory, you can then easily select any of those broadcast frequencies by pressing one of the preset-tuning buttons on the remote control or by using the jog dial.

You can input up to 40 radio stations (10 FM, 10 MW, 10 SW1 and 10 SW2) into the tuner's preset memory [For Australia and New Zealand, you can input up to 30 radio stations (10 FM, 10 LW, 10 MW) into the tuner's preset memory.].
(When you memorize a new frequency on a preset channel, it cancels the frequency previously memorized on that preset channel.)



Switch on the power.

1 **Press the band-select button to select FM, MW, SW1 or SW2 (For Australia and New Zealand, FM, LW, MW).**

2 **Press TUNING to select the MANUAL or AUTO tuning mode.**
- Every time you press this button, the MANUAL, PRESET and (AUTO) modes alternately appear.
- AUTO will appear only when the FM mode is selected.

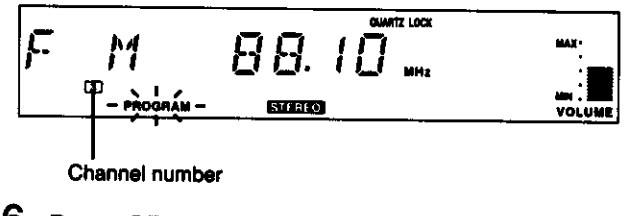
3 **Tune in your favourite station using the jog dial.**
Turn the jog dial until the correct frequency and the quartz lock indicator appear on the display.

4 **Press SET to activate the program indicator.**
The program indicator will flash for about 10 seconds.

5 **Turn the jog dial to select the desired preset channel while the program indicator is flashing.**

: The channel number will increase from 1 to 10.

: The channel number will decrease from 10 to 1.



Channel number

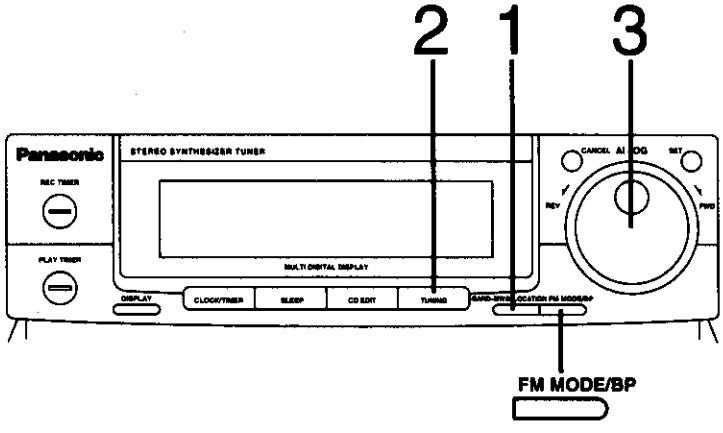
6 **Press SET.**
The program indicator will disappear.

7 **Repeat steps 3 through 6 to memorize a station in each of the remaining preset channels.**

Listening to Radio Broadcasts (continued)

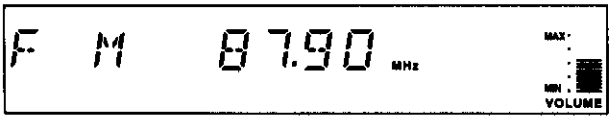
Memory tuner operation (to listen to broadcast stations preset into memory)

Switch on the power and be sure you've completed the steps of "Memory presetting" on page 19.



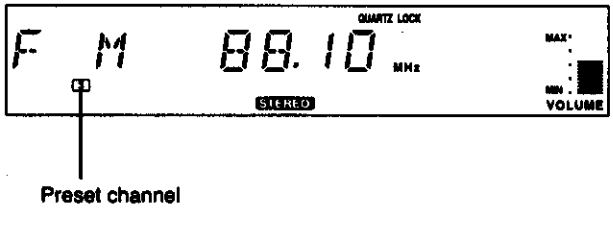
■ From the main unit

1 **Press the band-select button to select FM, MW, SW1 or SW2 (For Australia and New Zealand, FM, LW, MW).**



2 **Press TUNING to select PRESET.**

3 **Turn the jog dial to select the desired preset channel.**
The selected preset channel will appear on the display.



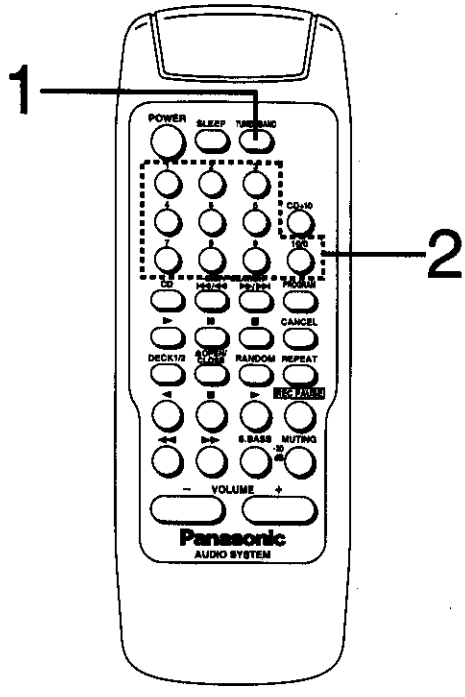
■ If noise is excessive in the FM mode

Press FM MODE/BP to monaural position.

FM MODE/BP

You will be in the monaural position when the FM STEREO indicator goes out.

The sound will then be heard in monaural. If the broadcast signal is weak, or if there is a large amount of interference, you will get a clearer sound using the FM mode/beat proof button.



■ From the remote control

1 **Press TUNER/BAND to select FM, MW, SW1 or SW2 (For Australia and New Zealand, FM, LW, MW).**

2 **Press the numeric button corresponding to the preset channel you wish to tune in.**

■ Most recent memory

The most recent memory system remembers the broadcast station last tuned to when you switch the power to standby mode or select other functions. When you switch the tuner back on, the last tuned station will be on.

The presets will stay in the memory for approximately 2 weeks, even if there is a power interruption.

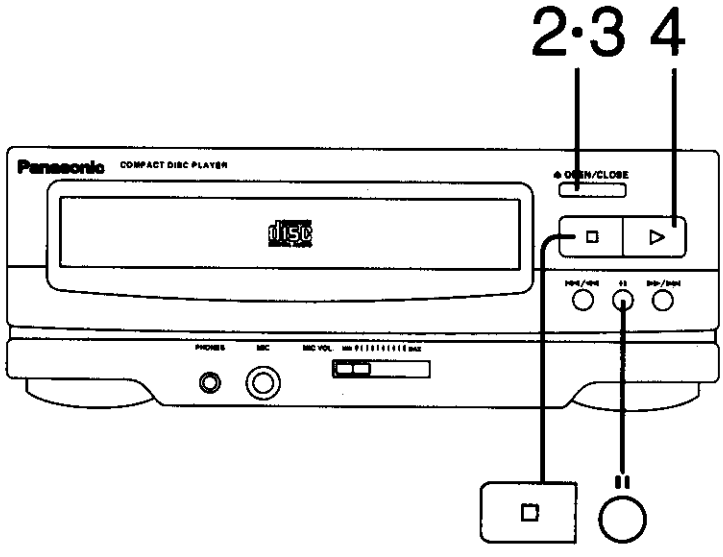
Listening to Compact Discs

Sequential play

ENGLISH

Sequential play refers to play beginning with the first track and continuing in order to the last track.

(Also available from the remote control.)



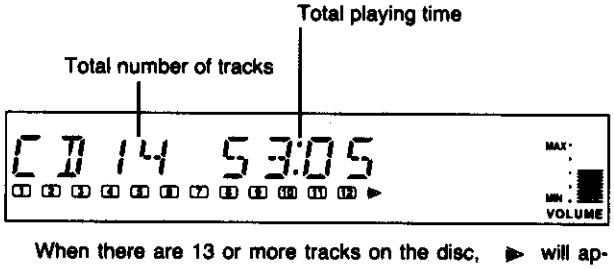
1 Press the CD input select button.

2 Press OPEN/CLOSE to open the disc tray. Insert the disc with label facing up.

Do not put your finger through the hole in the middle of the disc tray. It could get caught when the tray closes.

3 Press OPEN/CLOSE to close the disc tray.

When the disc tray is closed, the disc rotates, and the total number of tracks and total playing time both appear on the display panel.

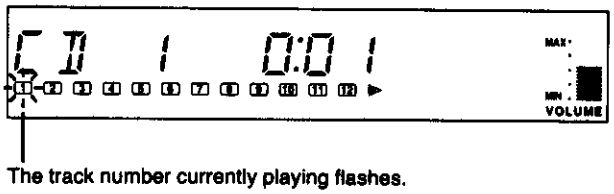


When there are 13 or more tracks on the disc, ▶ will appear.

4 Press the CD play button.

Disc play begins from the first track on the disc. The **pickup** (a laser device that reads the information on the disc surface) moves across the disc as the disc is played.

- The number of the track being played will flash while the track is played and go out at the end of that track.



The track number currently playing flashes.

- Play stops automatically when the last track on the disc finishes playing. (The display returns to the total number of tracks and total playing time indications.)

Note:

If you press the play button instead of OPEN/CLOSE after inserting a disc, the tray will close and play will start directly from the track 1, but the total tracks and total playing time will not be displayed.

■ To temporarily stop the disc play

(Also available from the remote control.)

Press the pause button.

The track number display and the elapsed time will start flashing.

Press the play or pause button to play again.

■ To stop the disc play

(Also available from the remote control.)

Press the stop button.

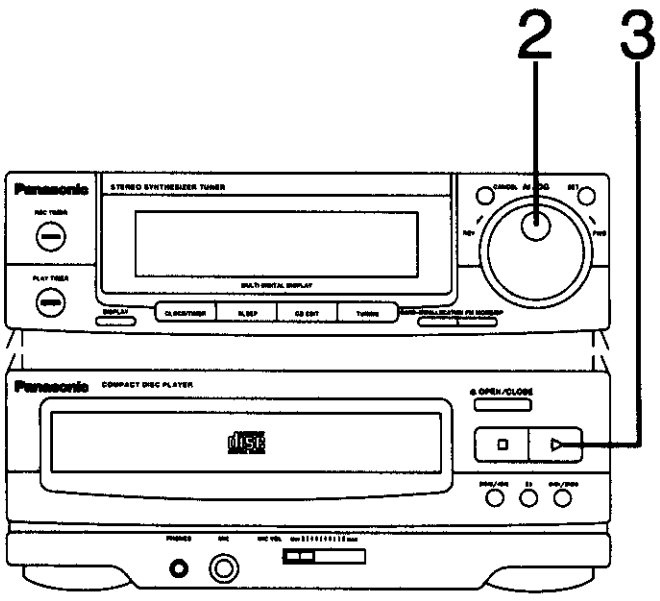
The player switches to the stop mode and the total number of tracks and total playing time are displayed.

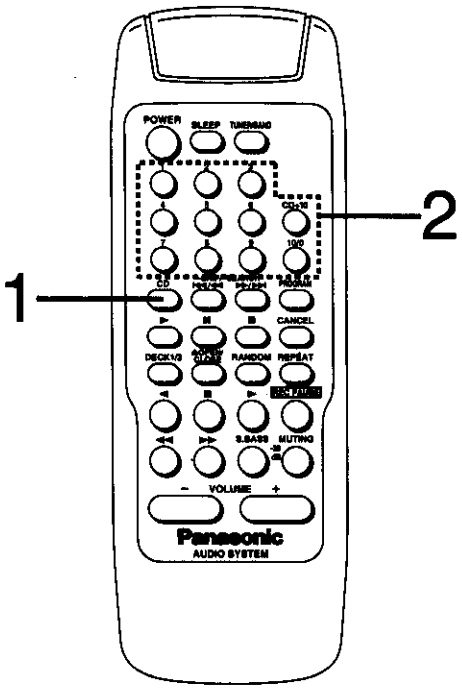
Listening to Compact Discs (continued)

Direct access play

Direct access allows you to start sequential play from a specific track to the last track on the disc.

Make sure the player is not in the program mode when using direct access.

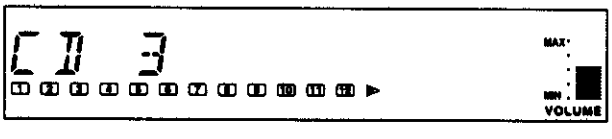




■ From the main unit

1 Press the CD input select button.

2 Turn the jog dial to select the track where you want to begin play.



3 Press the play button.

Play begins with the selected track, continues to the last track, and automatically stops.

■ From the remote control

1 Press the CD input select button.

2 Press a numeric button to select the desired track number.

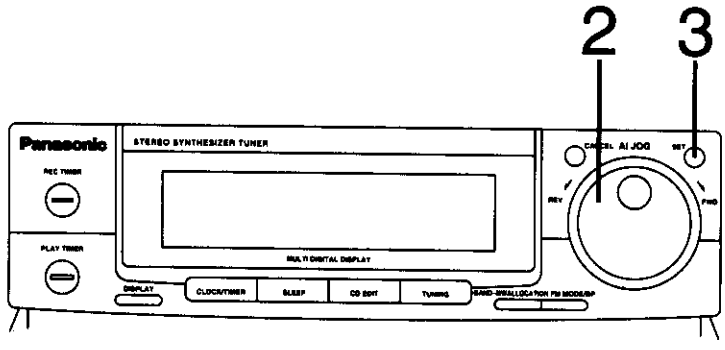
To select a track between 1 and 10:
Press the appropriate numeric button 1–10/0 directly.
To select a two-digit track over 10:
First press +10 and then a numeric button 1–10/0.
For example:
Track no. **13**: [+10] [3]
Track no. **20**: [+10] [+10] [10/0]
Track no. **35**: [+10] [+10] [+10] [5]

Play will start with the track you select, continue through the last track on the disc, and automatically stop at the end.

Note:
You cannot use direct access if the system is in the program mode.

Program play

This function allows you to program up to 36 tracks on a disc in any order you choose.



■ From the main unit

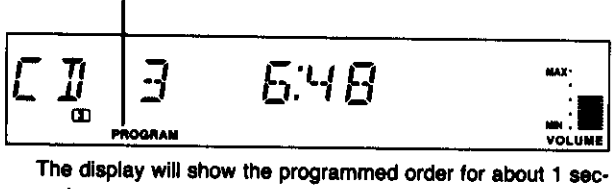
1 Press the CD input select button.

2 Turn the jog dial to select the track you want to play.

The former display will return if you allow 8 seconds to elapse before accomplishing the next operation.
If this happens, repeat this step.

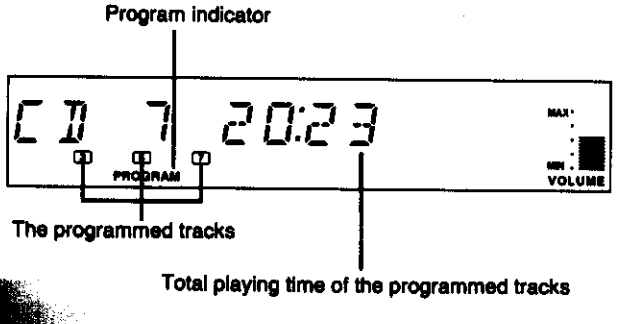
3 Press SET.

The program indicator will appear on the display.



The display will show the programmed order for about 1 second.
Then it will display the whole play time.

4 Repeat steps 2 and 3 for each track you wish to program in sequence.

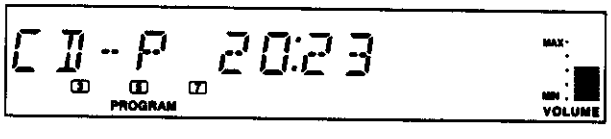


5 Press the CD play button.

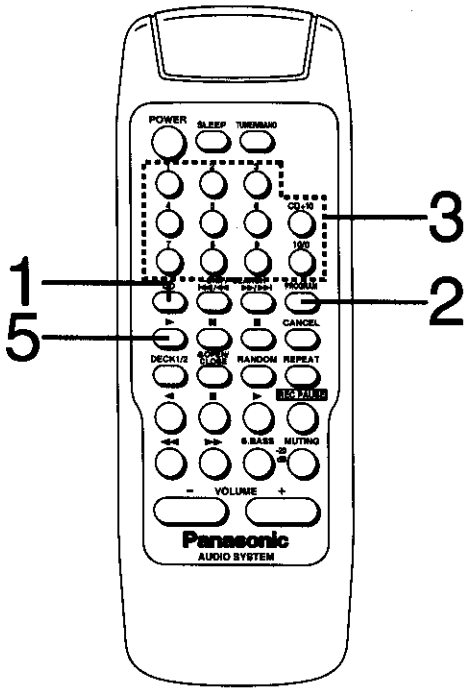
Program play will begin from the first track you programmed.

■ Program memory function

The player will retain the programmed tracks until you cancel the program play mode by opening the compact disc tray or by pressing the cancel button (see page 27). The player will retain the programmed tracks approximately for 2 weeks, even if there is a power interruption.



Listening to Compact Discs (continued)

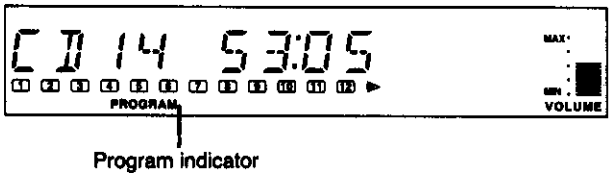


■ From the remote control

1 Press the CD input select button.

2 Press PROGRAM.

The program indicator will appear on the display.



Program indicator

3 Press the numeric buttons to select the track numbers.

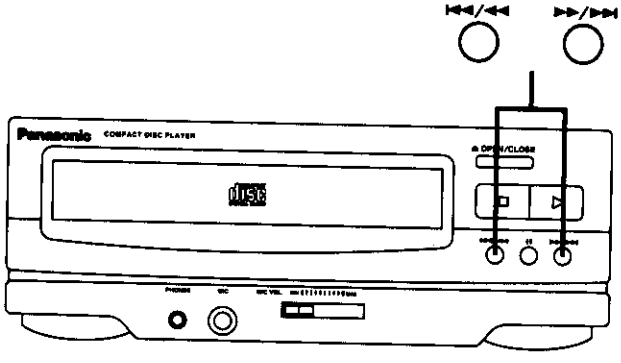
To select a track between 1 and 10:
Press the appropriate numeric button 1–10/0 directly.
To select a two-digit track over 10:
First press +10 and then a numeric button 1–10/0.
For example:
Track no. **13**: [+10] [3]
Track no. **20**: [+10] [+10] [10/0]
Track no. **35**: [+10] [+10] [+10] [5]

Notes:
- ERROR appears on the track display when you program a nonexistent track.
- FULL appears on the track display when you have tried to program more than 36 tracks to indicate that you cannot program more than 36 tracks.
- --:-- appears on the time display when the total play time of the programmed tracks exceeds 99 minutes. In this case, the display will not show the total time.

4 Repeat step 3 until you have completed the program.

5 Press the CD play button.

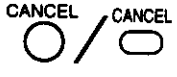
The program play will begin from the first track you programmed.



■ Changing the program

(Also available from the remote control.)

Press CANCEL (front panel or remote control) in the stop mode.



Each time you press the cancel button, you will cancel the last track in the programmed sequence.

Example:
When you have programmed tracks 3, 5 and 7, the tracks will be canceled in the sequence of 7, 5 and 3.

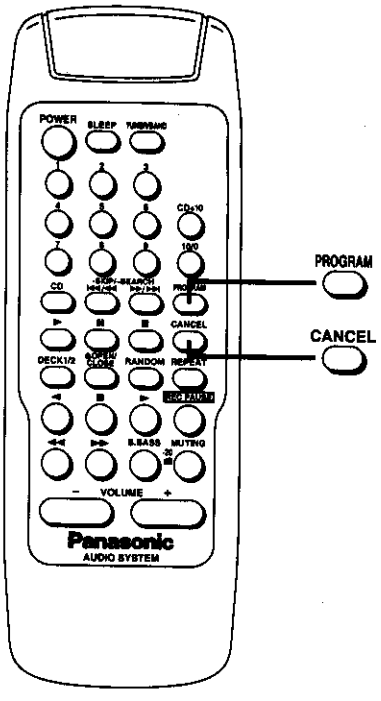
Note:
It is not possible to clear only the tracks located in the middle program (such as the third of five tracks).

■ To add the entry

You can add the entry in the stop mode.

From the main unit
In the stop mode, turn the jog dial to select the desired track and then press SET.

From the remote control
In the stop mode, press the desired numeric button.



■ To confirm the program

(Also available from the remote control.)

While in stop mode, press the skip/search button.

Each time you press the skip/search button, the display shows the next track in the program sequence.

■ To cancel program play

1. Press PROGRAM on the remote control in the stop mode.
   The program indicator will flash for several seconds.
2. Press CANCEL while the program indicator is flashing.
   The program indicator goes out and the program is cleared.

Note:
When you press OPEN/CLOSE to open the disc tray, the program play is cancelled.

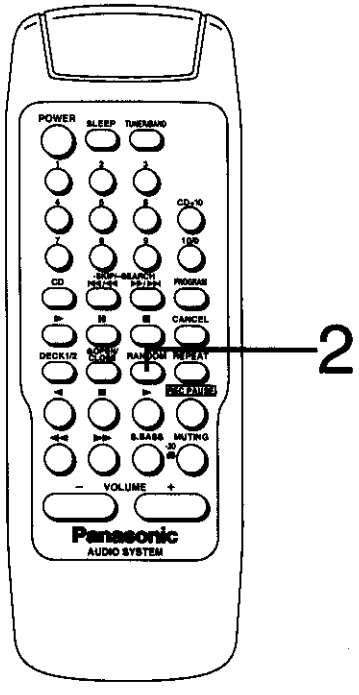
Listening to Compact Discs (continued)

ENGLISH

Random play (only from the remote control)

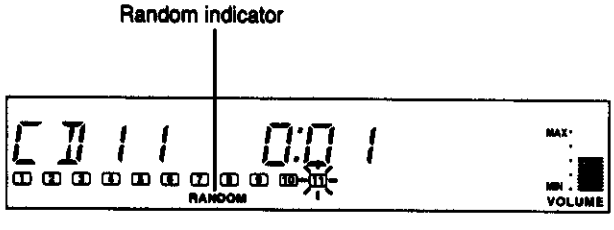
The microcomputer will automatically select a sequence of tracks to be played in random order.

Note:
You cannot use random play in combination with program play.



1 Press the CD input select button.

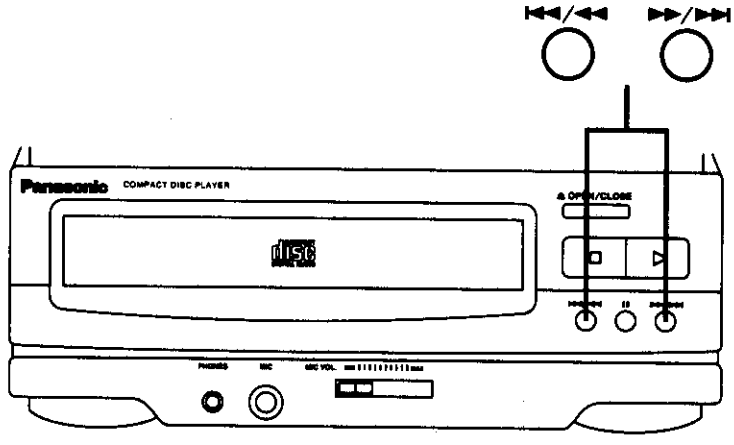
2 Press RANDOM on the remote control while player is in the stop mode.
The random indicator will light on the display, and random play will start.



■ To cancel random play

Press RANDOM once again to end random play.

The random indicator on the display will go out.



■ Skip function

(Also available from the remote control.)

While in play mode, press ⏮/◀◀ or ▶▶/⏭ skip button momentarily until you locate the desired track.

▶▶/⏭ Pickup skips forward.
The pickup will skip as many tracks as the number of times you press the button.

⏮/◀◀ Pickup skips backward.
Pressing this button once moves the pickup to the beginning of the track being played. If you press the button repetitively, the pickup will skip as many tracks as the number of times you press the button.

In program or random play mode:

- If you press the ▶▶/⏭ skip button during program or random play, the pickup will skip from one track to another in the programmed sequence.
- If you press the ⏮/◀◀ skip button during random play, the pickup skips backward to the beginning of the current track, not to the previous track.

■ Search function

(Also available from the remote control.)

While in play mode, press and hold one of the search buttons. Release the button when you have reached the desired point.

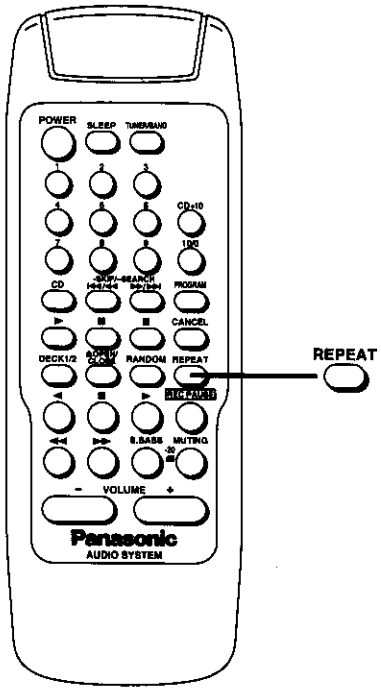
▶▶/⏭ Pickup moves forward.

⏮/◀◀ Pickup moves backward.

- At first, the pickup will move slowly and then rapidly if you hold the button in.
- The volume level will drop to about ¼ of normal.

In program and random play modes:
A search will take place only within the track being played.

Listening to Compact Discs (continued)

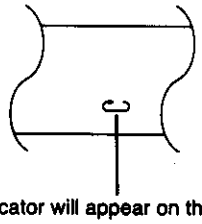


■ Repeat function (only from the remote control)

This function repeats the play of all tracks.

Press REPEAT before or during play.

REPEAT



Repeat indicator will appear on the display.

If you press REPEAT while program play is taking place, the player will repeat only the programmed tracks.
You can enjoy the same track over and over if you press REPEAT when only one track is programmed.

■ To cancel repeat play

Press REPEAT once again.

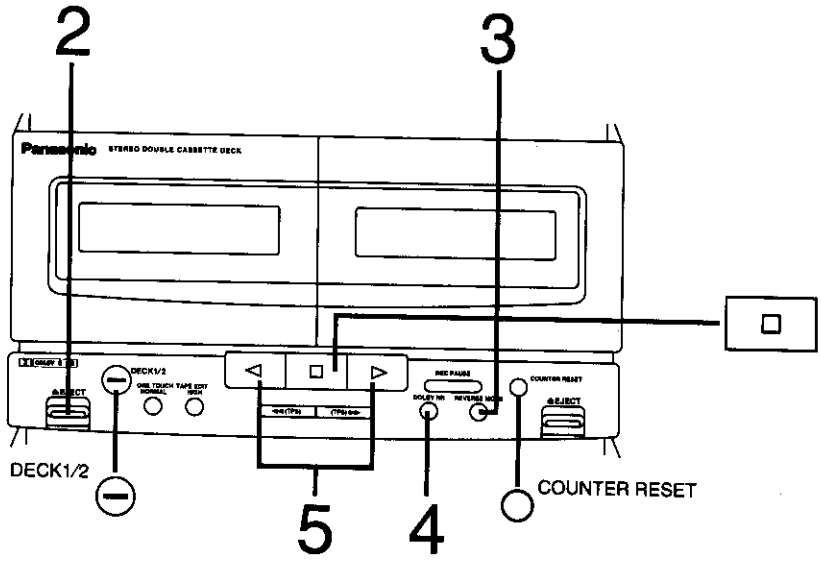
REPEAT

The repeat indicator on the display will go out.

Listening to Tapes

You can use either deck 1 or deck 2 for tape playback by following the same steps.

To play back prerecorded cassettes



1 Press the TAPE input select button.

2 Press EJECT, and then insert the cassette you wish to play.

- Insert the cassette with the exposed tape facing down.
- You can use normal, chrome and metal tapes for playback. This deck automatically identifies the kind of tape loaded, and sets the equalization accordingly. (**Auto tape selector function**)
- To reset the tape counter to 000, first press the DECK 1/2 to select the deck you are going to use and press the counter reset button.
  When the system reverses to play the reverse side of the tape, the counter will count backward (000, 999, 998...).

3 Press REVERSE MODE.

Each time you press, the display will show one of three reverse mode indicators.

: The player plays one side only, and then the tape automatically stops.

: The player plays both sides, and then the tape automatically stops.
If you start playback in the reverse mode, the player plays back only one side.

: **When you load a cassette into only one of the two decks;**
The player plays both sides of the tape repeatedly until you press the stop button.
When you load cassettes into both decks;
The player plays both sides (forward and reverse) of the tape in deck 1, and then both sides of the tape in deck 2. Playback will continue until you press the stop button. (See page 33.)

(For Australia and New Zealand only:)

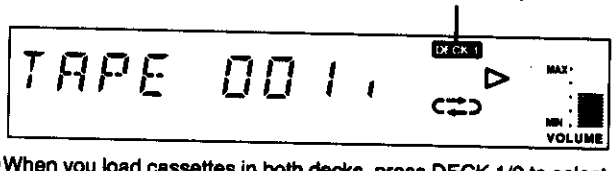
4 Press DOLBY NR if the cassette you want to play was recorded with Dolby noise reduction.

- The Dolby NR indicator lights.
- If the tape was not recorded in a Dolby NR mode, press DOLBY NR again. The Dolby NR indicator will go out.

5 Press one of the play buttons to start playback.

(Also available from the remote control.)
▷ : The forward side (front side) will play.
◁ : The reverse side will play.

The display indicates which tape is playing.



- When you load cassettes in both decks, press DECK 1/2 to select the deck you want to use.
- You can reverse the direction of play manually during playback by pressing the opposite playback button.

Listening to Tapes (continued)

■ To stop playback

(Also available from the remote control.)

Press the stop button.

■ Full auto-stop

When the tape reaches the end, the tape transport will automatically stop. However, if you have set the reverse mode select button to ⟲ in the playback mode, the auto-stop function will not operate.

■ About the Dolby Noise Reduction system

(For Australia and New Zealand only)

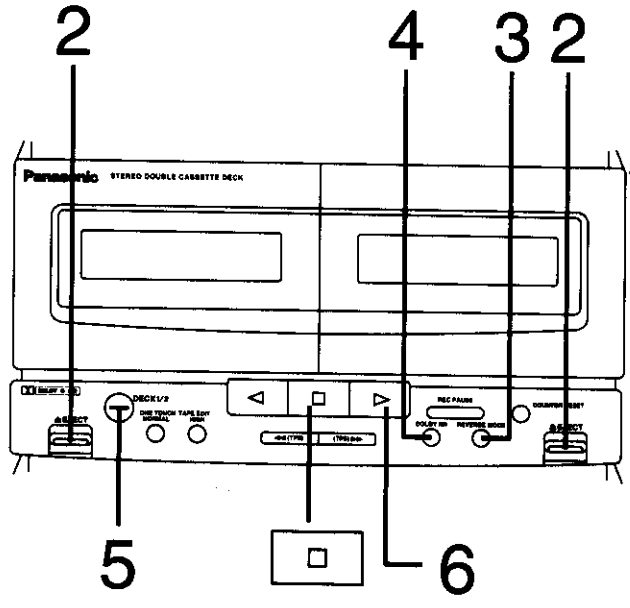
Using Dolby NR reduces tape hiss in the high-frequency range. It boosts the level of the high-frequency program content during recording, and lowers it by the same amount during playback, simultaneously reducing high-frequency noise incurred during the recording process.

This system has the Dolby B-type of noise-reduction system. With Dolby B, noise is reduced to about one-third. If you are playing a tape that was recorded with Dolby NR, use the Dolby NR mode during playback.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

Listening to two tapes consecutively

(Steps 5 and 6 also available from the remote control.)



1 Press the TAPE input select button.

2 Load cassettes in decks 1 and 2.
Load with the side that you wish to listen to first facing you in deck 1.

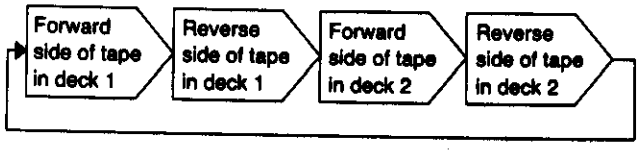
3 Press REVERSE MODE to set the ⇄ mode.

(For Australia and New Zealand only:)

4 Press DOLBY NR if the cassette you want to play was recorded with Dolby noise reduction.
The Dolby NR indicator will appear on the display when Dolby NR is on.

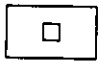
5 Press DECK 1/2 to select deck 1.
The deck 1 indicator will appear.

6 Press the forward-side playback (▷) button to start playback.
The two tapes will play back as follows:



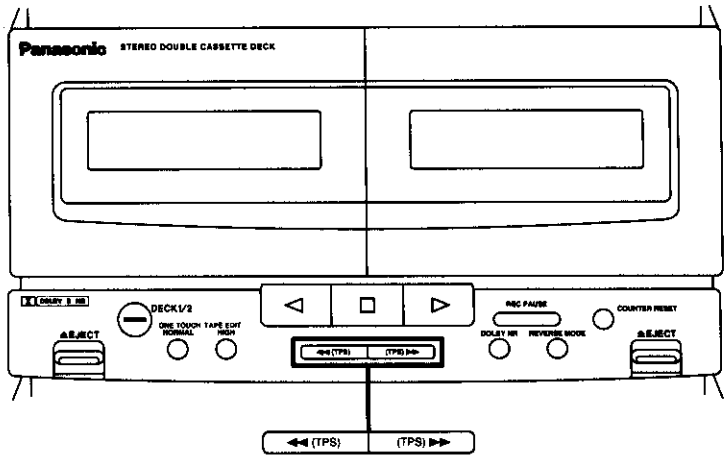
■ To stop the tape midway

Press the stop button.



- You can also start playback from a position other than the forward side of the tape in deck 1 by pressing the opposite playback button.
- When you load cassettes in both decks, the deck 1/2 indicator will show which deck you loaded last.
  When you switch on the power, the deck 1 indicator will always appear.

Listening to Tapes (continued)



To find the beginning of a program (TPS: tape program sensor)

(Also available from the remote control.)

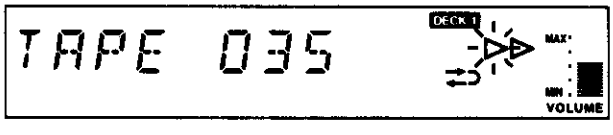
Press the fast-forward/rewind (TPS) button while the tape is playing.

◀◀ (TPS) (TPS) ▶▶

If the forward side (▷) of the tape is playing:

The tape will play from the beginning of the next program.

The tape will rewind to the beginning of the present program. Then the program will play again.



If the reverse side (◁) of the tape is playing:
The reverse of the above will take place.

While a TPS operation is taking place, the play indicator will flash.

Note:
The TPS function may sometimes fail to operate correctly in the following situations:

- When the interval between programs (dead space) is less than 4 seconds.
- When a tape has been recorded with fade-ins and fade-outs.
- When there is a particularly low-level passage or silent passages in the middle of a program.
- When you are playing a tape recorded from a microphone and there is no dead space between tape programs.
- When less than 10 seconds remain until the end of the present program or start of the next program.

To fast forward or rewind the tape

(Also available from the remote control.)

Press the fast-forward/rewind (TPS) button while the tape is stopped.

◀◀ (TPS) (TPS) ▶▶

The tape will start moving at high speed in the direction of the arrow (◀◀, ▶▶) regardless of which direction mode it is in.

To fast forward or rewind the tape while you are playing a tape in another deck, press DECK 1/2 button to switch to the nonplaying deck, and then press the fast forward or rewind button.

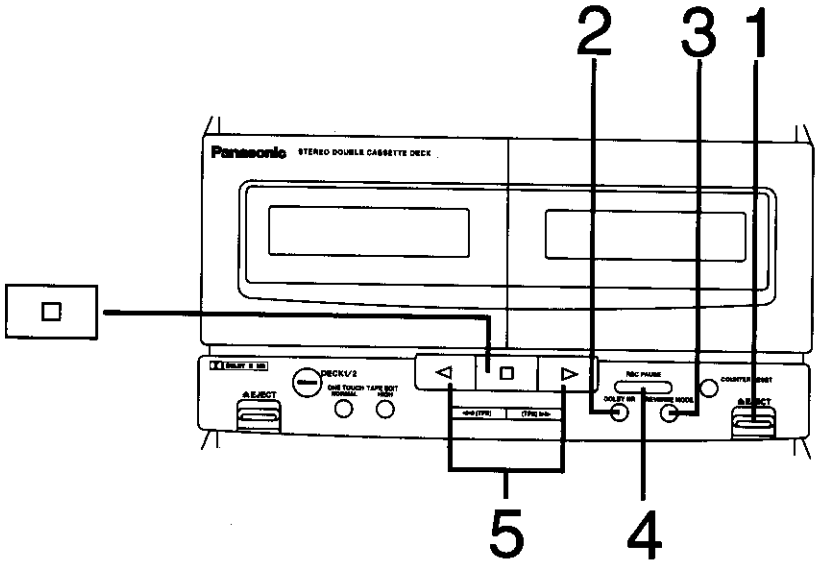
Making a Recording (Deck 2 only)

To record from the radio or external source

Although you can record a compact disc using the following procedures, we recommend that you use the compact disc edit-recording procedure to record a compact disc. (See "Edit-Recording from Compact Discs" on pages 38–43.)

To make a tape-to-tape recording, see "Tape-to-tape recording from deck 1 to deck 2" on page 37.

(Steps 4 and 5 also available from the remote control.)



Switch on the power.

1 **Press the deck 2 eject button to load a cassette in deck 2.**

- You cannot record on the leader tape (the first few revolutions) so take up the leader tape in advance.
- You can use normal and chrome tapes for recording. This deck automatically identifies the kind of tape loaded, and sets the bias (for recording) and equalization accordingly. **(Auto tape selector function)**

(For Australia and New Zealand only:)

2 **When making a Dolby NR recording, press the DOLBY NR so that the Dolby NR indicator appears.**

3 **Press REVERSE MODE to select the reverse mode you want to use.**

⇄ : One side will record, and then the tape will stop automatically.

⇄ / ⇄ : Both sides will record (forward side/reverse side) and then the tape will stop automatically.

4 **Press REC PAUSE to put the cassette deck into the recording standby mode; then press the input select button to select your desired sound source.**

The tape direction indicators will flash to show the direction in which you can record.

Recording indicator

5 **Press one of the playback buttons to start recording and start playing the source to be recorded.**

▷ : When recording on either the forward side or both sides.

◁ : When recording only on the reverse side.

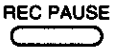
Your attention is drawn to the fact that recording pre-recorded tapes or discs on other published or broadcast material may infringe copyright laws.

Making a Recording (continued)

■ To briefly interrupt recording

(Also available from the remote control.)

Press REC PAUSE.



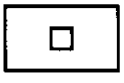
The cassette deck will go into the pause mode.

To resume recording, press the play button corresponding to the direction in which recording is taking place.

■ To stop recording

(Also available from the remote control.)

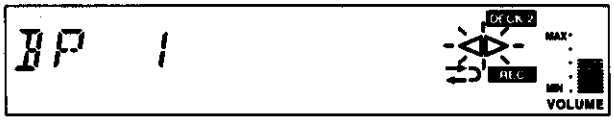
Press the cassette deck stop button.



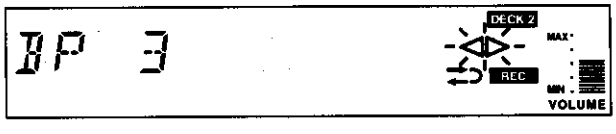
■ To use the beat proof function

Press FM MODE/BP on the tuner.

When recording an LW/MW (For areas except Australia and New Zealand, MW/SW1/SW2) broadcast, use the beat proof button to reduce unwanted "beat" signals (whistle). Press the FM mode/ beat proof button to whichever position [BP 1, BP 2 or BP 3 (For areas except for Australia and New Zealand, BP 1 or BP 2)] best reduces these beat signals. The display will indicate which position is in effect.



(For Australia and New Zealand only:)



■ To erase a recorded tape (Deck 2)

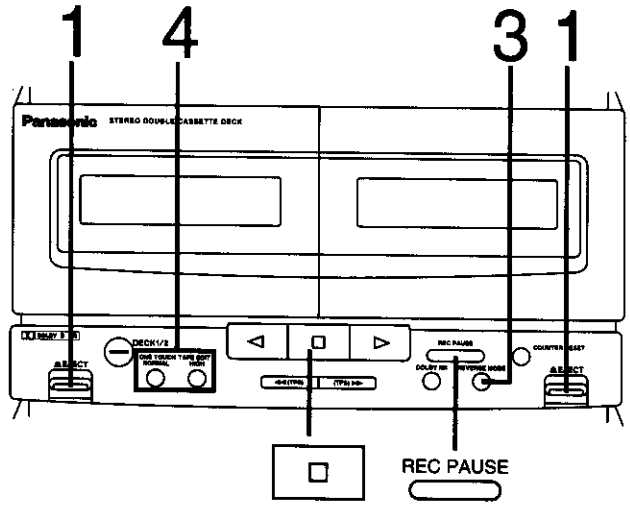
When you make a new recording on a previously recorded tape, the new recording will automatically erase what was previously recorded. To erase a tape without making a new recording, follow the steps below.

(Steps 4) and 5) also available from the remote control.)

1) **Press the TAPE input select button on the amplifier.**
2) **Insert the recorded tape into the cassette holder of deck 2.**
3) **Select the desired reverse mode.**
4) **Press REC PAUSE.**
5) **Press the playback button corresponding to the side to be erased.**

Tape-to-tape recording from deck 1 to deck 2

The recording level of the original (playback) tape will be recorded on the new tape just as they were in the original recording.



1 Insert the playback cassette into deck 1 and the cassette you are recording on (the editing tape) into deck 2.

- Advance the leader tape three or four revolutions.
- You can also use the different types of tapes for each deck 1 and 2.

2 Press the TAPE input select button.

3 Select the desired reverse mode.

⇄ : Single-sided recording (forward side only)

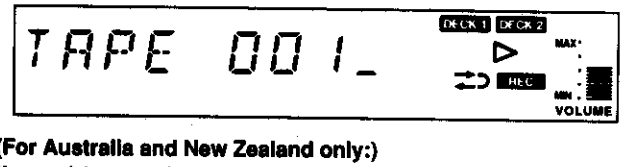
⇄ : Two-sided recording (forward side/reverse side)

4 Press one of the one-touch tape edit buttons (NORMAL or HIGH) to select editing speed.

NORMAL: When you wish to monitor the sound while recording

HIGH: When you wish to record at a high speed (about 1.7 times normal speed)

The synchro start function starts tape-to-tape recording.



(For Australia and New Zealand only:)
If you wish to monitor the sound of the tape with Dolby NR, set the Dolby NR switch to the ON position (only for normal speed recording).

Notes:

- While tape-to-tape recording is in progress, you cannot change the editing speed.
- Some TV sets generate noise that could be recorded during tape-to-tape recording. To prevent the possibility of this, do not use this system close to a TV set.

■ To briefly interrupt tape-to-tape recording

(Also available from the remote control.)

Press REC PAUSE.

- The cassette deck will go into the pause mode.
- To resume recording, press one of the one-touch tape edit buttons.

■ To stop the tape-to-tape-recording

(Also available from the remote control.)

Press the stop button in the deck section.

Both decks will stop.

■ To record another tape on the remaining blank tape

When the deck 1 completes playing back and stops, the deck 2 enters the recording standby mode;

At that time, replace the original (playback) tape with a new tape. Then press one of the one-touch tape edit buttons.

Edit-Recording from Compact Discs

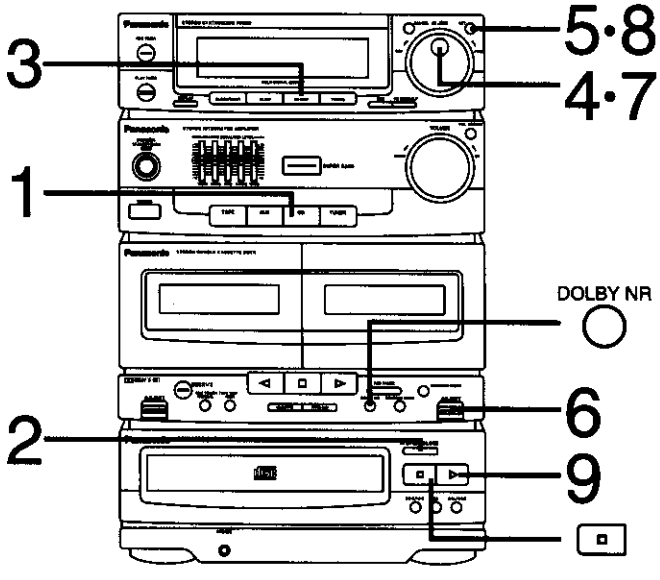
ENGLISH

You can edit-record up to 36 tracks.
Using the edit-recording safeguards against a break in the continuity of the sound when the recording changes from one side of the tape to the other.

Before recording, the cassette deck will automatically rewind the tape to the beginning and make a non-recorded passage about 10 seconds, then stop.
So you don't have to set the cassette tape to the starting position before recording.

Sequential CD recording (ALBUM)

The system calculates and displays in advance the length of the tape required to accommodate the recording of all the tracks on the compact disc in their original sequence. The tracks are then recorded in their original sequence.



Switch on the power.

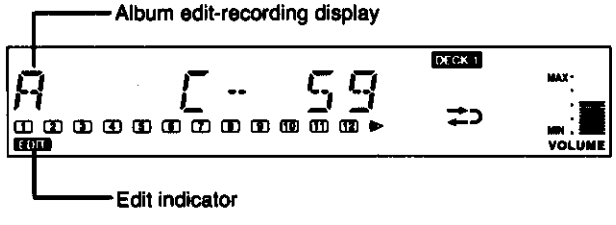
1 Press the CD input select button.

2 Press OPEN/CLOSE on the CD player to load a disc.
In this editing mode, you can use compact discs with up to 36 tracks.

3 Press CD EDIT.

4 Turn the jog dial to select ALBUM.
The ALBUM, PROGRAM, and FIT displays will appear in sequence.

5 Press SET.
The length of the tape required to record all the tracks appears on the display.



In this case, you would need a C-59 or longer tape.

If the compact disc has 37 or more tracks, ERROR appears first and then the system will automatically establish the program edit-recording mode (See page 42). Program up to 36 tracks in the program edit-recording mode, and proceed with the recording.

6 Load a cassette in deck 2.
- Since, in this case, you need a tape that is at least 59 minutes long, insert a C-60 tape.
  Check that the tape's erasure prevention tabs are intact. Then insert the cassette into deck 2.

(For Australia and New Zealand only:)
- When making a Dolby NR recording, press DOLBY NR.

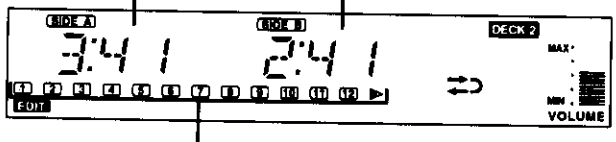
7 Turn the jog dial to specify the length of the tape you are using.

8 Press SET.

- The system assigns tracks to both sides of the tape and displays the results.
- The time remaining on both sides of the tape appears on the display.

The time remaining on the tape side A

The time remaining on the tape side B



Tracks to be recorded on both sides

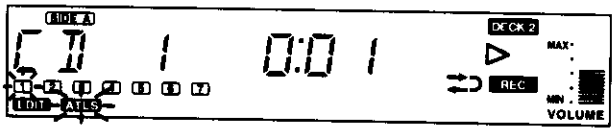
To confirm the time remaining and the tracks to be recorded on tape side A, press CD EDIT. Each time you press this button, the display will change as follows:

1. The time remaining and the tracks to be recorded on tape side A
2. The time remaining and the tracks to be recorded on tape side B
3. The time remaining and the tracks to be recorded on both sides of the tape

9 Press the CD play button for automatic recording.

The recording will start after the following steps.

1. The cassette deck starts to rewind the tape to the beginning.
2. The cassette deck forwards the tape making a non-recorded passage of about 10 seconds and stops to enter the recording standby mode.
3. The compact disc player automatically scans for the peak (highest) level of the entire disc (ATLS; see right.) and then recording will start.



When edit-recording has finished, the cassette deck automatically enters the recording standby mode.

If you want to change something you have set, or if an error has occurred, press the cancel button.
The system will return to the previous setting mode.

■ About Automatic Tape Level Setting (ATLS)

Since compact discs generally have a wide dynamic range, carefull setting of the record level is required to achieve the best recording results.
This system automatically scans (fast search) for the peak (highest) level of the entire disc, and the tape deck set the appropriate recording level. During this period, the peak level sound will not be heard.

■ To cancel album edit-recording

(Also available from the remote control.)

Press the CD stop button twice.

CLEAR will appear on the display.

ENGLISH

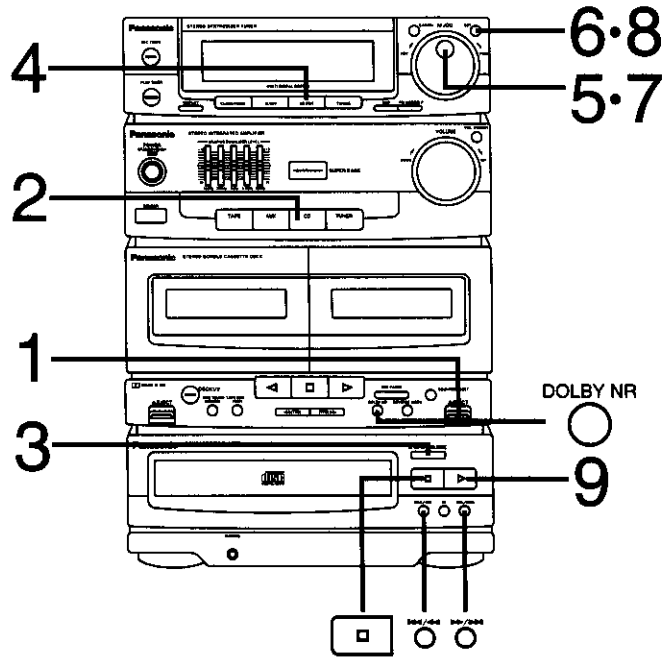
Edit-Recording from Compact Discs

(continued)

ENGLISH

Tape length priority recording (FIT EDIT)

When the tape is not long enough to record all the tracks on a compact disc in their original sequence, it is sometimes possible to record all the tracks by rearranging their sequence. The built-in microcomputer calculates whether this is possible and specifies track sequence.



1 Press the deck 2 eject button to load a cassette in deck 2.

- Check that the tape's erasure prevention tabs are intact.

(For Australia and New Zealand only:)

- When making a Dolby NR recording, press DOLBY NR.

2 Press the CD input select button.

3 Press OPEN/CLOSE on the CD player to load a disc.

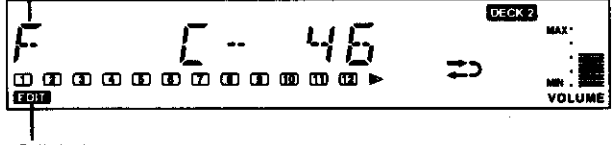
4 Press CD EDIT.

5 Turn the jog dial to select FIT.

The ALBUM, PROGRAM, and FIT displays will appear in sequence.

6 Press SET.

Fit edit-recording display



Edit indicator

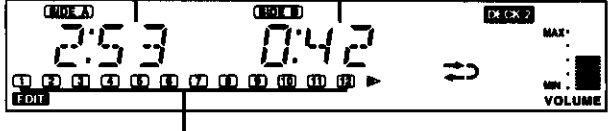
7 Turn the jog dial to select the length of the tape you are using.

8 Press SET.

The system assigns the tracks to both sides of the tape and displays the results.

The time remaining on the tape side A

The time remaining on the tape side B



Tracks that will fit on both sides

To confirm the time remaining and the tracks to be recorded on tape side A, press CD EDIT.

Each time you press the button, the display will change as follows:

1. The time remaining and the tracks to be recorded on tape side A
2. The time remaining and the tracks to be recorded on tape side B
3. The time remaining and the tracks to be recorded on both sides of the tape

9 Press the CD play button for automatic recording.

The recording will start after the following steps.

1. The cassette deck starts to rewind the tape to the beginning.
2. The cassette deck forwards the tape making a non-recorded passage of about 10 seconds and stops to enter the recording standby mode.
3. The compact disc player automatically scans for the peak (highest) level of the entire disc (ATLS; see page 39.) and then recording will start.

When edit-recording has finished, the cassette deck automatically enters the recording standby mode.

If you want to change something you have set, or if an error has occurred, press the cancel button.
The system will return to the previous setting mode.

Note:
When it is not possible to record all the tracks even by rearranging the track sequence, the OVER display will appear.

■ To cancel tape length priority recording (fit edit-recording)

(Also available from the remote control.)

Press the CD stop button twice.

The CLEAR display will appear.

■ To confirm the play sequence

(Also available from the remote control.)

You can confirm the play sequence on the display by pressing the skip/search button in the stop mode.

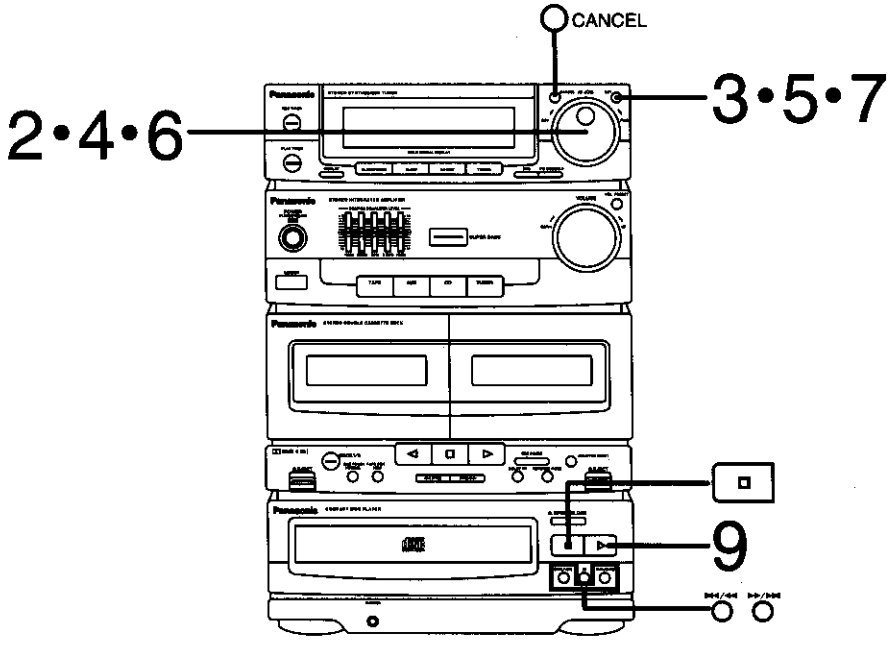
Edit-Recording from Compact Discs

(continued)

ENGLISH

Program edit-recording

You can specify the tracks to be recorded in the desired sequence while checking on the display how much time is left over.

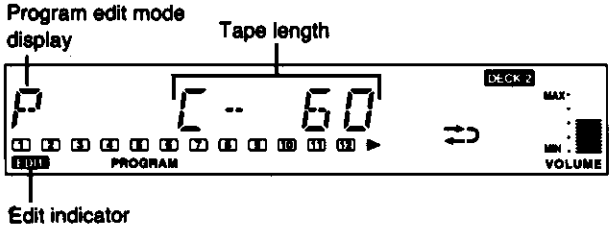


1 Follow tape length priority recording steps 1 through 4 (page 40).

2 Turn the jog dial to select PROGRAM.
The ALBUM, PROGRAM, and FIT displays will appear in sequence.

3 Press SET.

4 Turn the jog dial to select the length of the tape you are using.
You can specify the length by the minute.



5 Press SET.
The time remaining on both sides of the tape will appear on the display.

6 Turn the jog dial to assign the tracks in sequence.
You can also assign the tracks using the button on the numeric button on the remote control.
(See "Program play" on page 25 for detailed instructions.)

7 Press SET.

8 Repeat steps 6 and 7 to complete the program.
If there is no more time left on tape side A, the system will select tape side B automatically.

9 Press the CD play button to start recording.
The recording will start after the following steps.
1. The cassette deck starts to rewind the tape to the beginning.
2. The cassette deck forwards the tape making a non-recorded passage of about 10 seconds and stops to enter the recording standby mode.
3. The compact disc player automatically scans for the peak (highest) level of the programmed tracks (ATLS; see page 39.) and then recording will start.

When edit-recording has finished, the deck automatically enters the recording standby mode.

If you want to change something you have set, or if an error has occurred, press the cancel button.
The system will return to the previous setting mode.

■ To cancel program edit-recording
(Also available from the remote control.)

Press the CD stop button twice.

The CLEAR display will appear.

■ To confirm the play sequence
(Also available from the remote control.)

You can confirm the play sequence on the display by pressing the skip/search button in the stop mode.

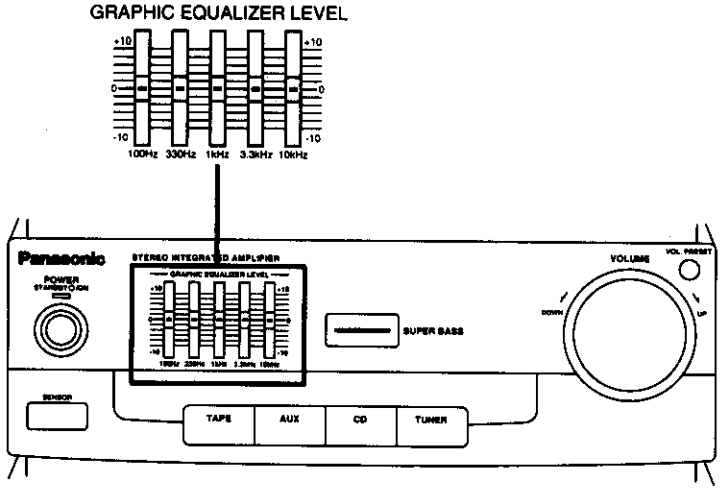
To record another disc on the remaining blank tape

When recording of the first disc has finished, you can record the tracks of another disc.
After recording and while the cassette deck is in the recording standby mode;

1) Check the time remaining on tape side B on the display.
2) Press OPEN/CLOSE on the CD player to open the disc tray, and then replace the disc with the second disc.
   To close the tray, press this button again.
3) Turn the jog dial to select the track you want to record.
4) Press SET.
5) Repeat steps 3) and 4) for each track you wish to program until the whole play time meets the time remaining on tape side B.
6) Press the CD play button.
   The synchro start function starts recording.

Changing the Tone Quality

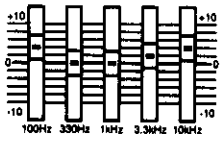
Using the graphic equalizer control



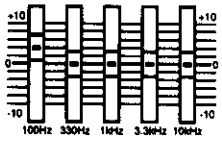
Adjust the graphic equalizer controls as desired.

■ Application examples

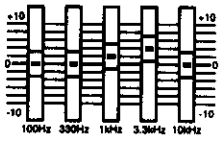
To reproduce disco music more powerfully ——————



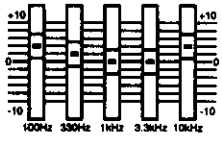
Compensation for frequency response
of the speaker system ——————



For clearer vocals ——————



To reproduce classical music ——————



The characteristics of each frequency band

(100 Hz): deep bass range
When this level is increased, the sounds from the bass guitar and drum have a feeling of greater and more impressive mass and volume.
When the level is reduced, indistinct sounds are changed to clear sounds.

(330 Hz): bass range
When this level is increased, the fullness and expansion of stringed instruments is produced; when the level is reduced, indistinct sounds can be clarified.

(1 kHz): mid range
When this level is increased, a greater tension is added to sounds, applause and cheers become even more lifelike, and an ambient presence is produced.

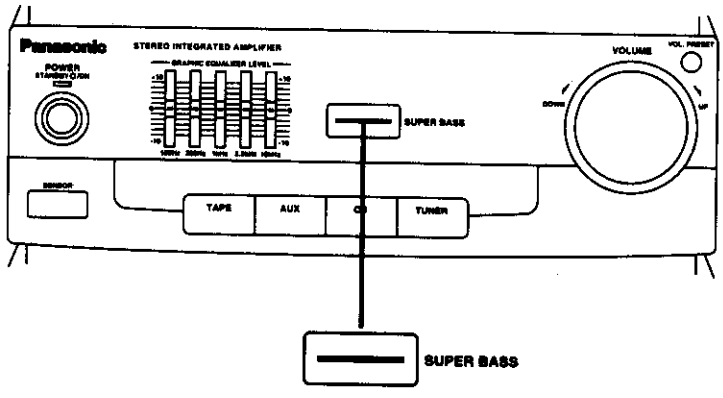
(3.3 kHz): mid-high range
When this level is increased, sounds become more lustrous and brilliant; when the level is reduced, too metallic sounds can be softened.

(10 kHz): treble range
When this level is increased, an extra glitter can be added to cymbals and the triangle; when the level is reduced, tape "hissing" noise can be reduced.

Note:
You cannot make a recording with the graphic equalizer effect.

To listen with augmented bass (super bass effect)

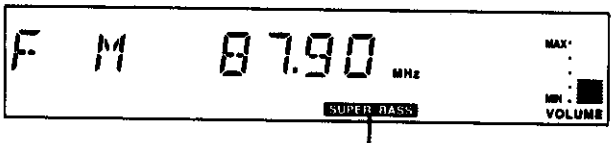
(Also available from the remote control.)



Press SUPER BASS.

The super bass indicator will appear.

Note:
You cannot make a recording with the super bass effect.



Super bass indicator

■ To cancel the super bass mode

(Also available from the remote control.)

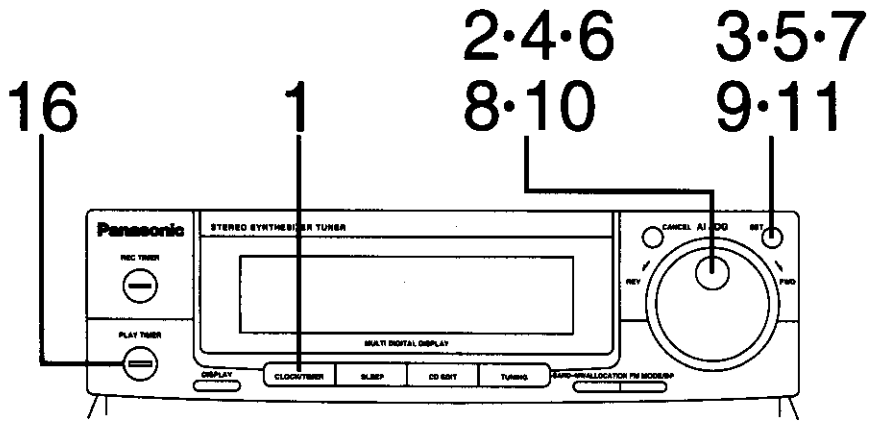
Press SUPER BASS again.

The super bass indicator will no longer appear.

Using the Timer

ENGLISH

Setting timer play



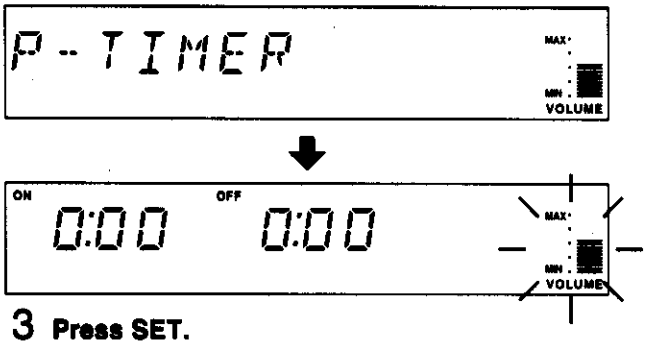
Have you read and completed "Setting the Time of Day" on page 15? If not, please complete these sections before continuing.

The following example shows how to set the timer play function for listening from 7:15 to 8:00.

Switch on the power.

1 **Press CLOCK/TIMER.**

2 **Turn the jog dial to select P-TIMER.**
P-TIMER will appear on the display, after which the display will show the timer ON and OFF time of 0:00.
- The display will return to what it was previously indicated if you allow 10 or more seconds to elapse before you accomplish the next operation.

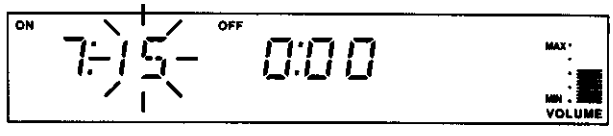


3 **Press SET.**
The timer ON time of 0 will start flashing.

4 **Turn the jog dial to select the hour you wish timer play to begin. In this case, set it on 7.**
The 7 will flash.

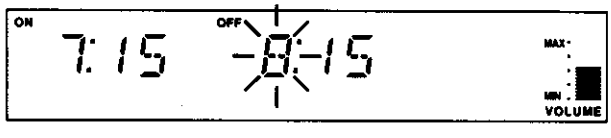
5 **Press SET.**
The hour will stop flashing and the minute will flash.

6 **Turn the jog dial to select the minutes you want timer play to begin. In this case, set it on 15.**
The 15 will flash.



7 **Press SET.**
The minutes will stop flashing and the timer OFF time of 7 will start flashing.

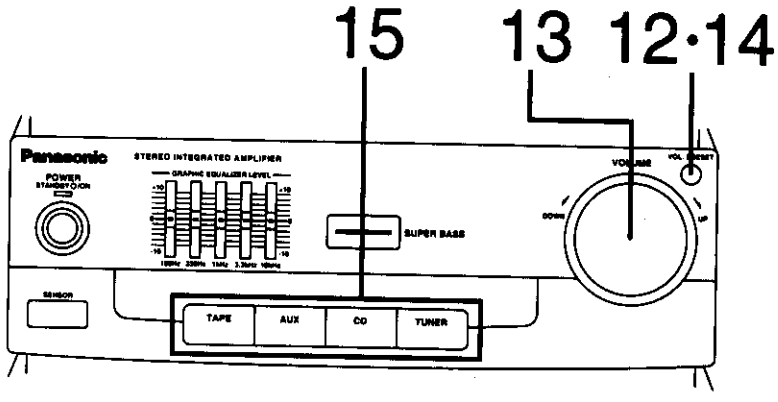
8 **Turn the jog dial to select the hour you want timer play to end. In this case, set it on 8.**
The 8 will flash.



9 **Press SET.**
The hour will stop flashing and the minute will flash.

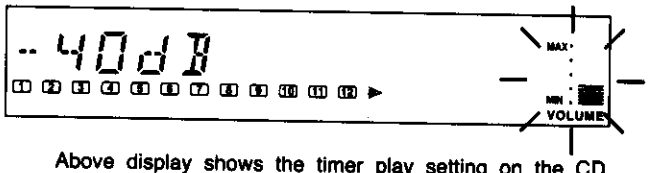
10 **Turn the jog dial to select the minutes you want timer play to end. In this case, set it on 00.**

11 **Press SET.**
The 00 will stop flashing, and the display will change to the previous display.



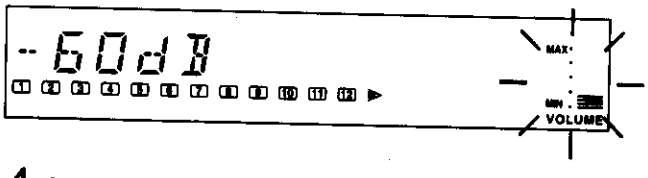
12 Press VOL PRESET to set the volume level for timer play.

The volume level display will flash.



Above display shows the timer play setting on the CD player.

13 Adjust the volume level using the volume level control.



14 Press VOL PRESET again.

The volume level display will stop flashing and the display will change to the previous display.

- This presets the volume level into memory.

15 Press one of the input select buttons.

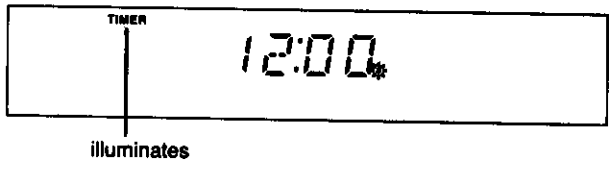
For timer play on the CD player:
Press the CD input select button.
You can use timer play for sequential play or program play. For program play, specify the desired tracks.

For timer play on the tuner:
Press the TUNER input select button, select the desired band, and tune in a station.

For timer play on the tape:
Press the TAPE input select button.
You can operate both decks 1 and 2 by the timer. When you load cassettes in both deck 1 and deck 2, deck 1 has priority and plays first.

16 Press PLAY TIMER.

The system is switched to power standby mode.



illuminates

The timer indicator will appear on the display.

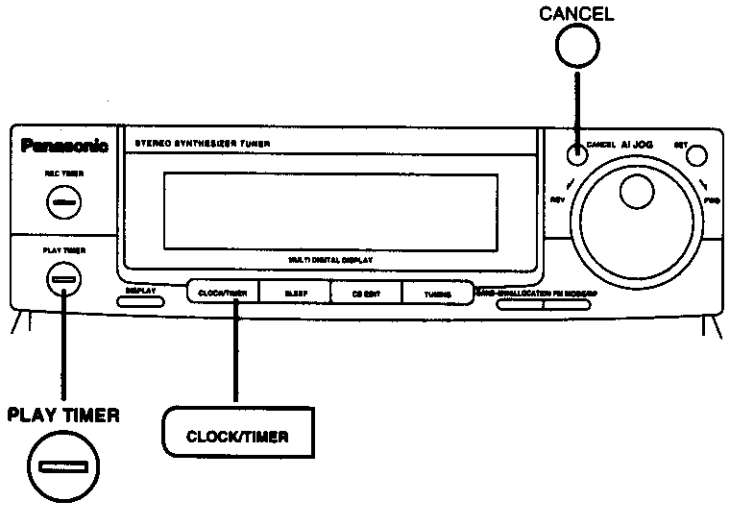
Play will start at the set time.

To listen to the system after you have set the timer but before timer play has taken place:
Press the power switch to on and select the desired source. After you have finished listening, return the system to the timer setting mode. (This switches the power to the standby mode.) Even if you change the volume level after presetting the volume level for the timer play, the timer play will start with the preset volume level.

Notes:

- If the power is on, the timer will not function. The system must be in the standby mode.
- If you are using the timer to play a compact disc, do not open the disc holder if you have already programmed tracks. This will cancel the program and play will start from the first track.

Using the Timer (continued)



■ When you have made a wrong setting on steps 1 to 10 (on page 46)

Press CANCEL.

CANCEL

The display will return to the previous step.

■ To confirm timer play

Press CLOCK/TIMER in the power standby mode.

CLOCK/TIMER

Each time you press this button the display will change as follows;
1. P-TIMER
2. ON time and OFF time
3. The source you selected

The volume level display will flash to show the preset volume level.

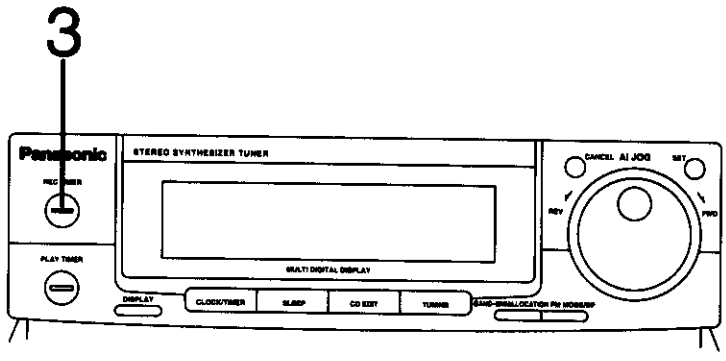
■ To cancel timer play

Press PLAY TIMER.

PLAY TIMER

The play timer indicator will go out.
The timer play will not occur, but the time ON/OFF setting for the timer play will remain in the memory.

Setting timer recording



Have you read and completed "Setting the Time of Day" on page 15? If not, please complete these sections before continuing.

The following example shows how to set the timer recording function for recording a broadcast from the tuner.

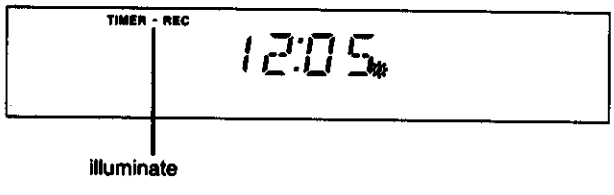
Switch on the power.

1 **Follow steps 1 through 11 on page 46 for setting the timer. In step 2, select R-TIMER instead of P-TIMER.**

2 **Press the TUNER input select button and tune in the station whose broadcast you want to record. Then insert a cassette into deck 2.**

3 **Press REC TIMER.**
The system is switched to the standby mode.

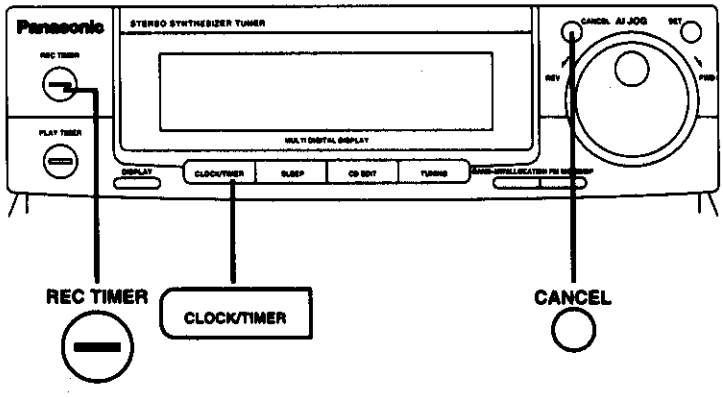
The timer recording indicator will appear on the display.
Timer recording will start at the preset time.



To listen to the system after you have set the timer but before timer recording has taken place:
Press the power switch to on and select the desired source. After you have finished listening, return the system to the timer setting mode. (This switches the power to standby mode.) If you are listening to a tape, using deck 1 is recommended.

Notes:
- After the timer recording is completed, the setting still remains in the system's memory. So after recording, it is recommended to cancel this mode by pressing REC TIMER to prevent the unexpected recording.
- If the power is on, the timer will not function. The system must be in the standby mode.
- While the timer recording is operating, the volume level is automatically — dB. If you wish to monitor the sound, adjust the volume level with the volume level control.
- It is not possible to set timer recording and timer play simultaneously. (For example, it is not possible to timer record a program in the middle of night, and then wake up by timer play the next morning.)

Using the Timer (continued)



■ When you have made a wrong setting on steps 1 to 10 (on page 46)

Press CANCEL.

CANCEL

The display will return to the previous step.

■ To confirm timer recording

Press CLOCK/TIMER in the power standby mode.

CLOCK/TIMER

Each time you press this button, the display will change as follows;
1. R-TIMER
2. ON time and OFF time
3. The source you selected

■ To cancel timer recording

Press REC TIMER.

REC TIMER

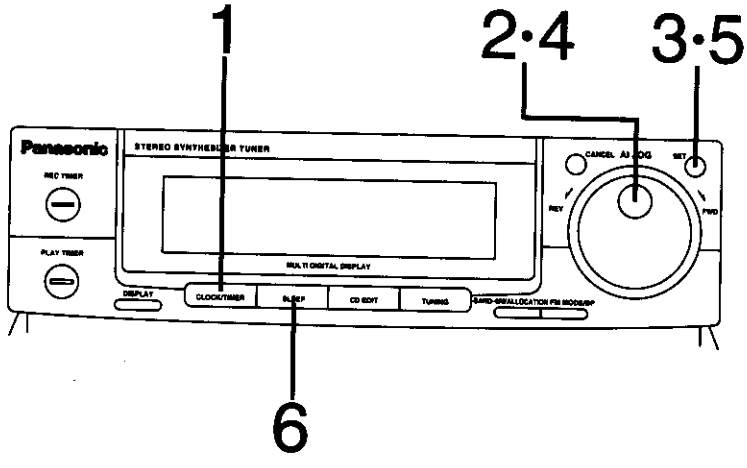
The timer recording indicator will go out. The timer recording will not occur, but the time ON/OFF setting for the timer recording will remain in the memory.

To use the sleep timer

You can use this timer function to switch the power to the standby mode at a desired time (within a range of 1 minute to 120 minutes from the present time).

Use the sleep timer to switch the power to the standby mode automatically in case you fall asleep while listening.

(Step 6 also available from the remote control.)



Switch on the power.

1 Press CLOCK/TIMER while the sound source is playing.

2 Turn the jog dial to select SLEEP while the sound source is playing.

The display will return to the previous indication after 10 seconds. Please finish setting within 10 seconds.

3 Press SET.

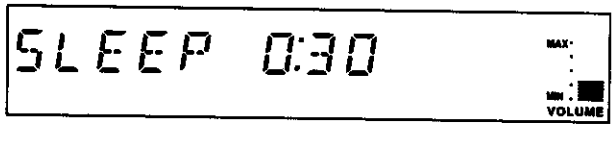
4 Turn the jog dial to set the length of time you would like the system to operate before it shuts off (sleep time).

: 0:01–0:02–0:03–0:04...

: 2:00–1:59–1:58–1:57...

5 Press SET.

The display will return to the previous display.



6 Press SLEEP.

The sleep timer indicator will appear.

Above display shows the sleep timer setting on the CD player.

The sleep time set by the steps above remains in the system's memory.
If you want to operate the system again on the same sleep time, you only need to press SLEEP.

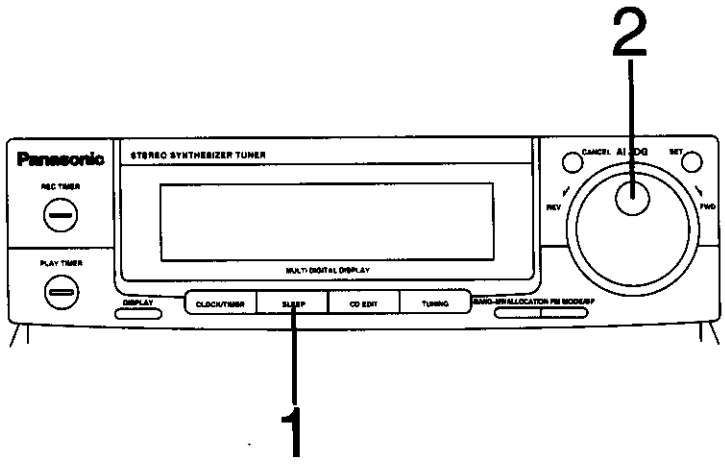
■ To confirm the time remaining on the sleep timer

(Also available from the remote control.)

Press SLEEP.

Approximately 5 seconds after you activate the sleep timer, the display will return to show the mode display. If you press SLEEP in this mode, the display will show the time remaining on the sleep timer for approximately 5 seconds.

Using the Timer (continued)



■ To change the time remaining on the sleep timer

1 Press SLEEP.

Within 5 seconds, follow with the next operation, or the display will return to what was previously indicated.

2 Turn the jog dial to set the desired time.

■ To cancel the sleep timer mode

Press the power switch to put the system in standby mode or press SLEEP twice.

■ To use the sleep timer in conjunction with the timer play or timer recording operation

For example, to go to sleep listening to a radio broadcast, and wake up the next morning listening to a compact disc.

1) Set the ON time and OFF time for the timer play. (See steps 1 to 11 on page 46.)
2) Prepare for the play of a compact disc, and set the volume level for the timer play.
3) Press PLAY TIMER. This will switch the system to the standby mode.
4) Press SLEEP and set the desired time for the sleep timer. This will switch the power on, and the sleep timer indicator will light.
5) Tune in your desired band and station, and adjust the volume level.

For example, to go to sleep listening to a compact disc, and then to make a timer recording from a radio broadcast.

1) Set the ON time and OFF time for the timer recording. (See page 49.)
2) Select the desired band.
3) Load a cassette for recording in deck 2.
4) Press REC TIMER.
5) Press SLEEP and set the time for the sleep timer. (Be sure to set the sleep time to be off before the timer recording starts.)
6) Play the compact disc and adjust the volume level.

When the timer play or the timer recording setting overlaps with the sleep timer setting, the sleep timer setting has higher priority.

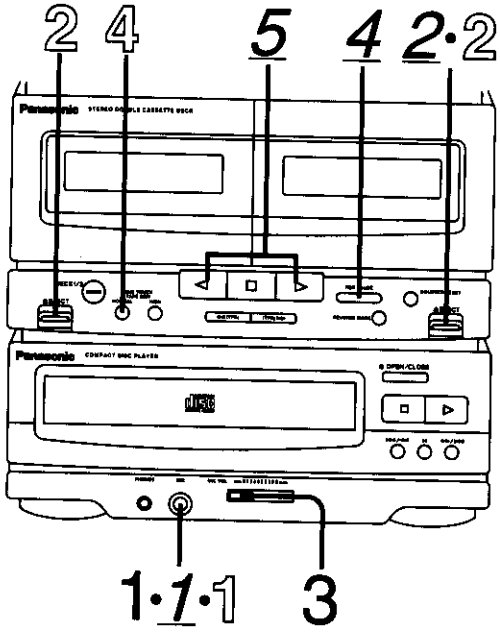
Using the Microphone (For areas except Australia and New Zealand only)

You can enjoy the microphone mixing playback or recording with this system.

Mixing is the combination of a voice or instrumental sound (through a microphone connected to the microphone jack) and the sound from a CD, tape or radio.

See "Basic Operating Procedure" on page 16 for concerning the connecting and adjusting the microphone volume level.

ENGLISH



Mixing playback

1 **Connect the microphone to the MIC jack.**

2 **Start the desired source to perform the mixing playback.**

3 **Adjust the microphone volume level using the MIC VOL control.**

Recording

■ Recording through microphone or performing the mixing recording

1 **Connect the microphone to the MIC jack.**

2 **Insert the cassette for recording in deck 2.**

3 **Press the input select button.**
When recording through microphone:
Press the TAPE input select button.
When performing the mixing recording:
Select your desired sound source.

4 **Press REC PAUSE to put the cassette deck into the recording standby mode.**

5 **Press one of the playback buttons to start recording.**
When performing the mixing recording:
Then start playing the source to be recorded.

■ Mixing recording with cassette tape

1 **Connect the microphone to the MIC jack.**

2 **Insert the playback cassette in deck 1 and the cassette you are recording on into deck 2.**

3 **Press the TAPE input select button.**

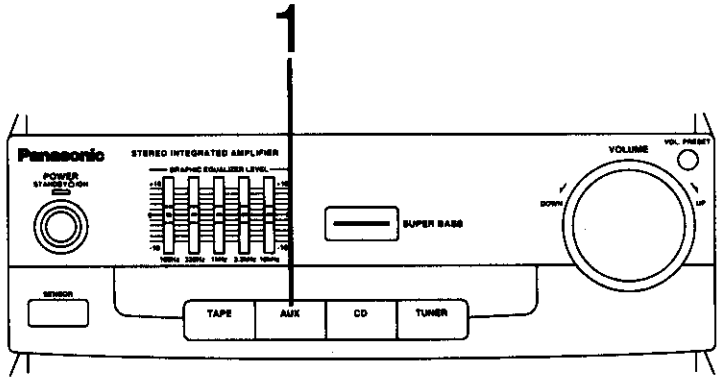
4 **Press the NORMAL edit button to start the recording.**

Notes:
- If you hear strange noises (squealing or howling) during mixing, move the microphone farther away from the speakers or turn down the volume.
- When you are not using the microphone, disconnect it from the MIC jack, and turn down the microphone volume level to "0 dB".

Using an External Unit

To enjoy an external source

You can connect an output terminal of a VCR or TV to this system.
(See page 6.)



1 Press the AUX input select button.

2 Operate the unit which is connected to the system.
See the operating instructions of the unit concerned.

Care & Use

Concerning Cassette Tapes

■ Selection of cassette tapes

Cassette tapes exceeding 90 minutes
These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the deck mechanism.

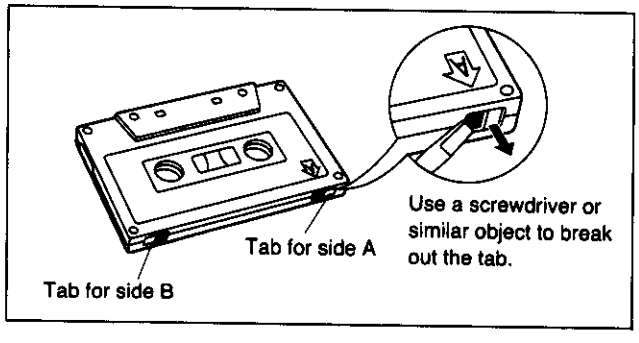
Do not use the following types of tapes in this unit:

•Fe-Cr tapes (TYPE III)
This type emphasizes the high-frequency range, making it impossible to obtain a flat frequency response.

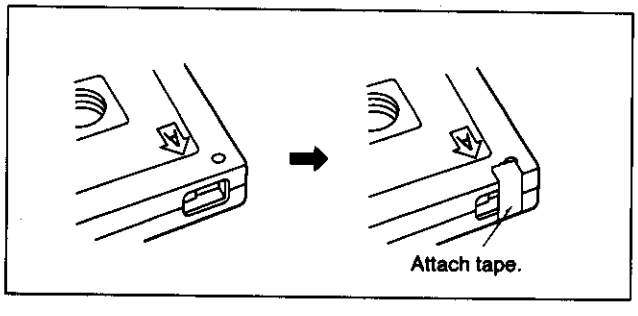
•Metal tape for recording
Recordings will be very distorted. (There is no problem during playback, however.)

■ To prevent erasure of a recorded tape

Remove the erase-prevention tabs (thus preventing recording).

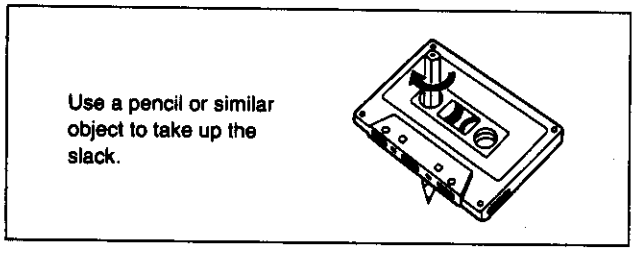


To re-record on a protected cassette
Cover the slot with adhesive tape.



■ Tape slack

Tape slack may cause the tape to break.



■ Improper tape storage

You can damage tape if you store it in the following ways:
- In high temperature [35°C (95°F) or higher] or high humidity (80% or higher) areas.
- In a strong magnetic field (near a speaker, on top of a TV, etc.). This can erase a recording.
- In direct sunlight.

Care & Use (continued)

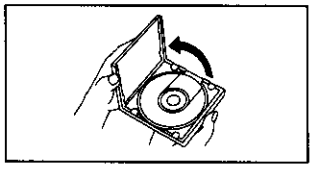
Concerning Compact Discs

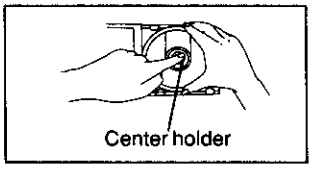
With this system, you can only use compact discs having this mark:

COMPACT disc DIGITAL AUDIO

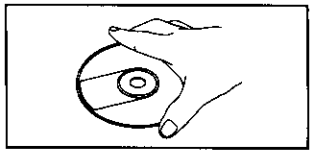
■ Handling precautions

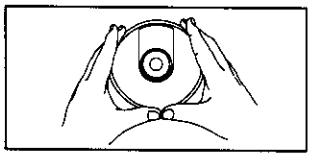
- To open the compact disc case, gently press the sides of the top, holding the top at both sides and pull up.
  To remove the disc from the case, press the center holder and lift the disc, holding it by the edges.



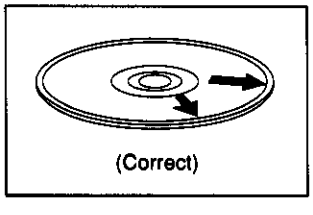


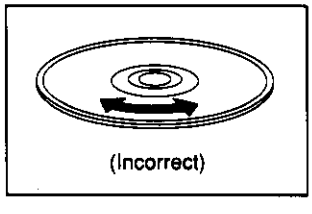
- To return the disc to the case, insert the disc with label facing up and press downward at the center.
- Hold compact discs by the edges so you will not soil the surface with fingerprints. Fingerprints, dirt, and scratches can cause skipping and distortion.





- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids, or any other solvent.
- If the surface is soiled, wipe gently with a soft, damp (water only) cloth.
- Always move the cloth directly outward from the center of the disc, not in a circular motion as with standard phonograph records.





- If you are taking the disc from a cold to a warm environment, moisture may form on the disc. Wipe this off with a soft, dry, lint-free cloth before using the disc.
- Do not write on the label side with a ball-point pen or other writing instrument.

■ Storage precautions

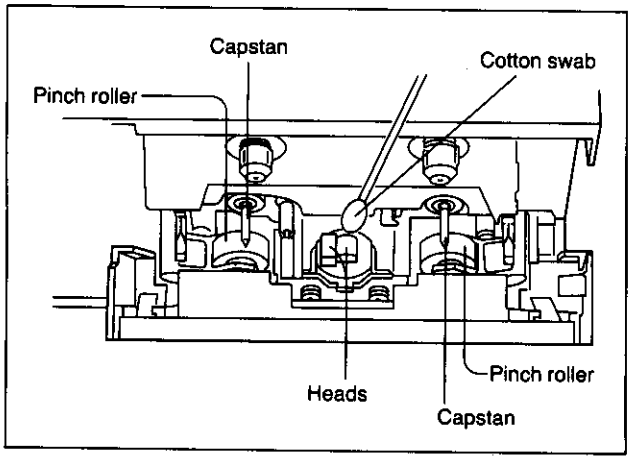
- Be sure to store discs in their cases to protect them from dust, scratches, and warping.
- Do not place or store discs in the following places:
  1) Locations exposed to direct sunlight.
  2) Humid or dusty locations.
  3) Locations directly exposed to a heat vent or heating appliance.
  4) In the glove compartment or rear deck of an automobile.

Maintenance

■ Cassette deck head care

To ensure good sound quality for recording and playback, be sure to clean the heads approximately every 10 hours of use.

1) Turn off the power of the system.
2) Press the eject button to open the cassette holder.
3) Clean the heads, pinch roller, and the capstan shaft with a cotton swab (or with a soft, lint-free cloth) slightly moistened with isopropyl alcohol. Do not use any solution other than alcohol for head cleaning.



■ Cassette deck head demagnetization

- In order to maintain good sound quality during recording and playback, we recommend that you demagnetize the head assembly when there is still distortion or poor sound quality after you have cleaned the heads.
- If the head assembly becomes magnetized, it could create noise in your recordings, cause a loss of high-frequency response, or cause the erasure of valuable recordings. There are several types of head demagnetizers that you can purchase at local electronics supply stores.
  Follow the instructions that are supplied with the demagnetizer.
- Do not touch the head assembly with any type of metal object or tool such as a magnetic screwdriver.

■ Maintenance of external surfaces

- Use a soft, dry cloth to clean the cabinet and controls.
  If the surfaces are extremely dirty, use a soft cloth, dipped in a soap-and-water solution or a weak detergent solution. Wring the cloth well before wiping the surfaces. Then wipe once again with a soft, dry cloth.
- Never use alcohol, paint thinner, benzine, or a chemically treated cloth to clean the cabinet or controls. Such chemicals may damage the finish of your system.

Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.
If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

Problem	Probable cause(s)	Suggested remedy
Problems common to all systems		
There is no sound when the power is ON and no bar appears on the volume level display.	Volume is set too low.	Adjust the volume level with the volume control on the amplifier.
The location of the various musical instruments is not well defined.	The (+) and (−) connections to one of the speakers are reversed.	Connect the speaker cord correctly.
The left and right sounds are reversed.	The left and right connections to the speaker are reversed.	Connect the speaker cords correctly.
Only one speaker is emitting sound.	One of the wires of the speaker cord is disconnected.	Connect the speaker cord correctly.
There is no sound when a source is being played.	The (+) and (−) wires of the speaker cords are shorted.	Switch the system to the standby mode, reconnect the speaker cords so that they are not shorted. Then switch on the power.
There is a low-frequency hum when a source is being played.	A power cord or a fluorescent light is located near a connecting cord.	Keep electrical appliances well away from the connecting cords.
The ERROR indicator appears on the display for about 1 second.	The wrong operation has just taken place.	Perform the correct operation of the present step again.
While listening to FM broadcasts		
There is a "rushing" noise during a stereo broadcast which is not audible during a monaural broadcast.	Noise is more likely to appear on a stereo signal than on a monaural signal.	•If you are using an indoor antenna, change to an outdoor antenna. •If you are using a special outdoor antenna, try changing the installation location, height, and orientation. •Try switching off the television or VCR. •Press the FM mode button to change the reception from stereo to monaural mode.
You hear excessive noise during a stereo broadcast, and occasionally the sound disappears.	The installation location and orientation of the antenna are unsuitable. The transmitting station is a long distance away.	
The stereo indicator of the tuner flickers and does not light completely.		
The sound during a stereo broadcast is highly distorted.	There is a building or mountain nearby. [Distortion is caused by interference between the signal from the transmitting station (direct wave) and the signal reflected from the building or mountain (reflected wave).]	
While listening to AM broadcasts		
You hear an unusual beat sound.	You are using the system at the same time you are playing a TV set.	Switch off the TV set, or use the system further away from it.
You hear a low-frequency hum.	The antenna wire is near the power cord.	Separate the antenna wire from the power cord.

Problem	Probable cause(s)	Suggested remedy
When there is a television set nearby		
The picture on the TV disappears or stripes appear on the screen.	The location and orientation of the antenna are incorrect.	•If an indoor antenna is being used, change to an outdoor antenna. •Separate the TV set from the system.
	The wiring at the back of the system is unsuitable.	Separate the antenna wire of the TV set from the system.
While listening to tapes		
Sound is low, intermittent, or poor quality, noisy, scratchy, or unsteady.	Heads are dirty.	Clean the heads.
The deck section does not enter the recording mode.	The erase-prevention tabs are removed from the cassette.	Attach tape to cover the space left by removal of the erase-prevention tabs.
The cassette holder does not open even by pressing the eject button.	The AC power cord is disconnected or a power interruption has taken place during operation.	After reconnecting the AC power cord, switch on the power and then press the eject button.
While listening to compact discs		
The tray does not close when you load a disc and press the OPEN/CLOSE button.	The disc is not positioned correctly in the disc tray.	Reinsert the disc.
The display will not show the total number of tracks and total time when you load a disc. **Disc play does not start when you press the play button.** **A certain part of the disc will not play.**	The disc is not positioned correctly in the disc tray.	Reinsert the disc.
	The disc is loaded upside down.	Reload the disc.
	The disc is dirty.	Wipe the disc with a soft cloth.
	The disc is scratched.	Skip the scratched part of the disc (skip play).
	The disc is badly warped.	Replace the disc with a new one.
	The disc is a nonstandard one.	Replace the disc with a different one.
	There is condensation inside the disc player.	Switch the power ON, then wait for one hour before using the disc player.
While using the remote control		
The remote control will not operate the system.	You have installed the batteries in the reverse polarity.	Reinsert the batteries in the correct polarity.
	The batteries are worn out.	Replace the batteries with new batteries.

Technical Specifications

ENGLISH

■ Amplifier section

1 kHz continuous power output	
both channels driven	2×20 W (THD 1%, 6Ω)
MPO	2×150 W (THD 10%, 6Ω)
PMPO	300 W (THD 10%, 6Ω)
Total harmonic distortion	
half power at 1 kHz	0.1% (6Ω)
(For Australia and New Zealand:)	0.07% (6Ω)
Frequency response	
AUX	30 Hz–20 kHz (−3 dB)
(For Australia and New Zealand:)	30 Hz–30 kHz (−3 dB)
Input sensitivity	
AUX	250 mV
Input impedance	
AUX	22 kΩ
(For Australia and New Zealand:)	24 kΩ
Graphic equalizer	±10 dB
	(100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz)
Load impedance	6Ω

■ FM tuner section

Frequency range	87.50–108.00 MHz
Sensitivity	23.3 dBf (4.0 µV, IHF' 58)
S/N 26 dB	5.0 µV (40 kHz mod., 6Ω)
Total harmonic distortion	
MONO	0.3%
STEREO	0.5%
S/N	
MONO	65 dB
Frequency response	30 Hz–15 kHz (+0.5 dB, −2 dB)
Image rejection at 98 MHz	35 dB
(For Australia and New Zealand:)	40 dB
Stereo separation at 1 kHz	35 dB
Antenna terminal(s)	75Ω (unbalanced)

■ AM tuner section

Frequency range	
MW	531–1602 kHz (9 kHz-steps)
	530–1600 kHz (10 kHz-steps)
SW 1	3.2–7.300 MHz
SW 2	9.5–21.850 MHz
(For Australia and New Zealand:)	
MW	522–1611 kHz
LW	144–288 kHz
Sensitivity (for 500 mW)	
MW (at 999 kHz, 1000 kHz)	250 µV/m
SW 1 (at 4 MHz)	12.6 µV
SW 2 (at 12 MHz)	40 µV
(For Australia and New Zealand:)	
MW (at 999 kHz)	250 µV/m
LW (at 252 kHz)	350 µV/m

■ Cassette deck section

Track system	4-track, 2-channel
Heads	
Playback	Solid permalloy
Record/Playback	Solid permalloy
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias, 100 kHz
Erase system	AC erase, 100 kHz
Tape speed	4.8 cm/sec.
Frequency response	
NORMAL	40 Hz–14 kHz (+3, −6 dB)
CrO_2	40 Hz–14 kHz (+3, −6 dB)
S/N (CrO_2 type tape)	
(For Australia and New Zealand only:)	
Dolby NR off	52 dB (A-WTD)
Dolby NR on	61 dB (CCIR)
Wow and Flutter	0.1% (WRMS)
Fast forward and rewind time	
	Approx. 110 seconds with C-60 cassette tape

■ CD player section

Sampling frequency	44.1 kHz
Decoding	16-bit linear
Beam Source/wave length	Semiconductor laser/780 nm
Number of channels	2-channel, stereo
Frequency response	20 Hz–20 kHz (+1, −2 dB)
S/N	90 dB Filter (JIS. A)
Wow and Flutter	Below measurable limit
Digital filter	4 times over sampling
D/A converter	Multi-stage noise shaping

■ Speaker system

Type	2 way, 2 speakers bass-reflex
Speaker(s)	Woofer 13 cm cone type
	Tweeter 5 cm cone type
Impedance	6Ω
Input power	50 W (music), 25 W (DIN)
Output sound pressure level	87 dB/W (1.0 m)
Cross over frequency	3 kHz
Frequency range	50 Hz–22 kHz (−16 dB)
	60 Hz–20 kHz (−10 dB)
Dimensions (W×H×D)	180×319×250 mm
Weight	3.3 kg

■ General

Power consumption	120 W
(For Australia and New Zealand:)	95 W
Power supply	AC 50/60 Hz, 110 V/127 V/220 V/240 V
(For Australia and New Zealand:)	AC 50 Hz, 230–240 V
Dimensions (W×H×D)	215×319×338 mm
Weight	6.9 kg

Notes:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

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